PB-239 345

CIVIL AVIATION STUDIES AND INTERAGENCY COORDINATING ORGANIZATIONS. VOLUME II. APPENDICES

Carl Modig

Informatics, Incorporated

Prepared for:

Environmental Protection Agency

December 1974

DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE

BIBLIOGRAPHIC DATA SHEET

1. Report No. EPA 550/9-74-019B

2.

PB 239 345

4. Title and Subtitle
CIVIL AVIATION STUDIES AND INTERAGENCY COORDINATING ORGANIZATIONS
Appendices
Volume 2, Excerpts from Source Documents

5. Report Date December 1974

6.

7. Author(s) Carl Modig

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
Informatics Inc.
Noise Information Program
6000 Executive Blvd.
Rockville, Md. 20852

10. Project/Task/Work Unit No.

11. Contract/Grant No. 68-01-2229

12. Sponsoring Organization Name and Address
U. S. Environmental Protection Agency
Office of Noise Abatement and Control
1921 Jefferson Davis Highway
Arlington, Virginia 20460

13. Type of Report & Period Covered Final

14.

15. Supplementary Notes

Volume one contains the main report.

16. Abstracts

Seventeen source documents are reproduced in whole or in part to provide more detailed information on topics covered in the main report (Volume 1), which describes various federal organizations set up to coordinate or study civil aviation policy, including those dealing with the aircraft noise problem. Included are complete recommendations of reports, membership lists, organizational charts, and report excerpts. These selections represent a small fraction of the source document collection on this topic available for use at the Office of Noise Abatement and Control of the U. S. Environmental Protection Agency.

17. Key Words and Document Analysis. 17a. Descriptors

Civil Aviation Policy
Presidential Commissions
Congressional Commissions
Noise Pollution

17b. Identifiers/Open-Ended Terms

Air Coordinating Committee
Federal Aircraft Noise Abatement Program
Doolittle Report
Harding Report
CARD Study
RADCAP Study
Aviation Advisory Commission
EPA Report to Congress on Aircraft/Airport Noise

17c. COSATI Field/Group S/D

PRICES SUBJECT TO CHANGE

18. Availability Statement
Release unlimited

Reproduced by
NATIONAL TECHNICAL INFORMATION SERVICE
US Department of Commerce
Springfield, VA. 22151

19. Security Class (This Report) UNCLASSIFIED

20. Security Class (This Page) UNCLASSIFIED

21. No. of Pages 180

22. Price 7.00

FORM NTIS-35 (REV. 3-72)

THIS FORM MAY BE REPRODUCED

USCOMM-DC 14952-P72

EPA 550/9-74-019B

CIVIL AVIATION STUDIES AND INTERAGENCY COORDINATING ORGANIZATIONS

(Appendices)

DECEMBER 1974

Prepared by

Carl Modig
Under Contract 68-01-2229

for the

Office of Noise Abatement and Control
U.S. Environmental Protection Agency

This report has been approved for general availability. The contents of this report reflect the views of the contractor, who is responsible for the facts and the accuracy of the data presented herein, and do not necessarily reflect the official views or policy of EPA. This report does not constitute a standard, specification, or regulation.

ACKNOWLEDGEMENTS

This compilation could not have been produced without the help of many people on the staff of the Office of Noise Abatement and Control, in addition to the staff of the Informatics Noise Information Program.

ONAC staffers who assisted included John Schettino and Harvey Nozick, who provided overall guidance; Dorothy Stuart and Eileen Fadely, who made significant research contributions and also provided much-appreciated typing support; and Stan Durkee and Cosimo Caccavari, who reviewed the draft. Other ONAC personnel provided many useful insights into particular organizations from their direct experience. These included Eugene Wyszpolski, Alan Merkin, William Sperry, and ONAC consultants Joseph Blatt and Dr. Henning von Gierke.

From the Informatics, Inc., staff, Jerry Rafats, Librarian for the Noise Information Program, was indispensable in tracking down hard-to-find documents; Mrs. Shellie Ballon provided editorial support; and last but far from least, Frank Wilson contributed a painstaking and highly useful review of the interim draft.

VOLUME II

APPENDICES

A. Outline History of Air Coordinating Committee

B. Texts of Executive Orders Establishing and Disestablishing the ACC (E. O. 9781, 10883)

C. Verbatim Text of Finan Report Recommendations Concerning the ACC

D. Restatement of Objectives in Terms of Work Plan by PEDC, July 1967

E. Excerpt from Summary Status Report, Federal Aircraft Noise Abatement Program

F. Presidential Documents Associated with FANAP

G. 1972 IANAP Membership List

H. Conclusions of the Doolittle Report

I. Excerpts from the Harding Report on Government Organization, Interagency Coordination, and the Federal Role in Civil Aviation. Comments of J. G. Bennett, Jr. and N. E. Halaby

J. Contractor Reports for Curtis Report

K. Recommendations of the Curtis Group Concerning Aircraft Noise

L. Organization of and Persons Cooperating with the Card Study

M. RADCAP Study Organization

N. Members, Staff, Consultants, and Organizations Assisting the Aviation Advisory Commission

O. Members and Consultants, Task Group 1, EPA Aircraft/Airport Noise Study

P. Excerpt from Report of Task Group 1, EPA Aircraft/Airport Noise Study

Q. Memorandum on Government Organization for Civil Aviation, by P. W. Cherington, for the Aviation Advisory Commission

APPENDIX A

Outline History of Air Coordinating Committee

APPENDIX A

OUTLINE HISTORY OF AIR COORDINATING COMMITTEE

ACC established by interdepartmental memorandum.	Mar. 27, 1945
ACC formally established by President Truman to provide "fullest development and coordination of Federal activities (Exec. order 9781).	Sep. 19, 1948
ACC Industry Advisory Panel organized.	Fall 1946
ACC publishes A Statement of Certain Policies of the Executive Branch of the Government in the General Field of Aviation. This ACC Policy statement, representing views of the executive branch, covered routes, air mail, airports, all other aspects of a national aviation policy. Used as an input by the PAPC. ACC's first big special report.	Aug. 1, 1974
Annual report; calls for increased aircraft production, covers ICAO activities in detail.	Feb. 10, 1948
ACC accepts RTCA's SC-31 Report Recommendations for an all-weather traffic control system.	Mar. 16, 1948
Air Traffic Control and Navigation Panel (NAV Panel) organized to implement the SC-31 Report of the RTCA for an all-weather traffic control system.	July 1948
State/Local Advisory Panel organized, per PAPC and CAPB recommendations (Av. Daily, Sept. 13, 1948).	July 1948
Stanford Report, technical study of the aircraft industry, released.	July - Aug., 1948
CAB Chairman J. J. O'Connell appointed Chairman.	Aug. 4, 1948
Treasury Dept. named to full voting membership by President Truman (Exec. Order 9990).	Aug. 24, 1948
Charles O. Cary named Esecutive Secretary.	Dec. 7, 1948

ACC firm on change from statute to nautical miles against civil aviation industry opposition.	Apr., 1952
President Eisenhower requests a comprehensive review of Federal aviation.	Sept. 23, 1953
Release of a report prepared by the Secretariat for the President: Civil Air Policy. Criticism that Secretariat is exceeding its place by adopting too much of a leadership role.	May 1954
Criticism of ACC's ineffectiveness as a coordination mechanism in Harding Report. Parts of ACC report of May 1954 used as an example.	1955
FCC named to full voting membership in ACC by President Eisenhower by Executive Order 10655.	Jan. 28, 1956
Curtis Report proposes that ACC be eventually dissolved.	May 1957
ACC rejects San Diego's proposed location for new city airport because of Navy Dept's. objections that it would be too close to a Navy Air Facility. (Av. Daily, Jun. 13, 1957)	Jun. 1957
Statement of Organization and Functions issued by ACC Secretariat.	Oct. 1957
FAA established by Act of Congress.	Aug. 23, 1958
Executive Order 10796 makes FAA a full member and the FAA representative the Chairman of ACC.	Dec. 24, 1958
Functions of the ACC's Aerospace Division transferred to FAA. (During 1959 most of ACC's NAV panel Functions were absorbed by FAA.)	July 1959
ACC's Subcommittee in Aeronautical Charts and Maps inactivated when representative announces at meeting of subcommittee that FAA is assuming this function under the Federal Aviation Act of 1958. FAA statement, read into the minutes of the meeting, contain the information that FAA move was approved by BOB and concurred in by the military departments.	Aug. 12, 1959

ACC terminated by Executive Order 10883, effective Oct. 11, 1960. FAA charged with winding up ACC affairs.	Aug. 11, 1960
ACC being phased out by FAA to meet Oct. 10 deadline set by Eisenhower Executive Order. New IGIA being developed, FAA absorbing ACC Functions and personnel.	Aug-Sep., 1960

APPENDIX B

Texts of Executive Orders Establishing and Disestablishing the ACC (E. O. 9781, 10883)

APPENDIX B

TEXTS OF EXECUTIVE ORDERS ESTABLISHING AND DISESTABLISHING THE ACC (E.O. 9781, 10883)

EXECUTIVE ORDER 9781

ESTABLISHING THE AIR COORDINATING COMMITTEE

By virtue of the authority vested in me as President of the United States, and in order to provide for the fullest development and coordination of the aviation policies and activities of the Federal agencies, and in the interest of the internal management of the Government, it is hereby ordered as follows:

1. (a) There is hereby established the Air Coordinating Committee (hereinafter referred to as the Committee) which shall have as members one representative from each of the following names agencies (hereinafter referred to as the participating agencies); the State, War, Post Office, Navy, and Commerce Departments and the Civil Aeronautics Board. The members shall be degisnated by the respective heads of the participating agencies. The President shall name one of the members as the Chairman of the Committee. The Director of the Bureau of the Budget shall designate a representative of the Bureau as a non-voting member of the Committee.

(b) Each officer of body authorized under subparagraph 1(a) hereof to designate a member of the Committee shall also designate one or more alternate members, may be necessary.

(c) The Committee shall establish procedures to provide for participation, including participation in voting, by a representative of any agency not named to subparagraph 1 (a) hereof in connection with such aviation matters as are of substantial interest to that agency.

2. The Committee shall examine aviation problems and developments affecting more than one participating agency; develop and recommend integrated policies to be carried out and actions to be taken by the participating agencies or by any other Government agency charged with responsibility in the aviation field; and, to the extent permitted by law, coordinate the aviation activities of such agencies except activities relating to the exercise of quasi-judicial functions.

3. The Committee shall consult with Federal inter-agency boards and committees concerned in any manner with aviationactivities; and consult with the representatives of the United States to the Provisional International Civil Aviation Organization or to the permanent successor thereof and recommend to the Department of State general policy directives and instructions for the guidance of the said representatives.

4. The Committee, after obtaining the views of the head of each agency concerned, shall submit to the President, together with the said views, (a) such of the Committee's recommendations on aviation policies as require the attention of the President by reason of their character or importance, (b) those important aviation questions the disposition of which is prevented by the inability of the agencies concerned to agree, (c) an annual report of the Committee's activities during each calendar year, to be submitted not later than January 31 of the next succeeding year, and (d) such interim reports as may be necessary or desirable.

5. The heads of the participating agencies shall cause their respective agencies to use the facilities of the Committee in all appropriate circumstances and, consonant with law, to provide the Committee with such personnel assistance as may be necessary.

Harry S. Truman

The White House
September 19, 1946

EXECUTIVE ORDER 10883

TERMINATION OF THE AIR COORDINATING COMMITTEE

By virtue of the authority vested in me as President of the United States, it is ordered as follows:

1. The Air Coordinating Committee is hereby terminated.

2. Executive Order No. 10655[1] of January 28, 1956, relating to the Air Coordinating Committee, and Executive Order No. 10796[2] of December, 24, 1958, amending that order are hereby revoked.

3. The Administrator of the Federal Aviation Agency shall make such provisions as may be necessary for winding up any outstanding affairs of the Air Coordinating Committee, and such provisions may be made at any time after the date of this order.

4. Except as provided in paragraph 3, this order shall become effective on the sixtieth day following the date thereof.

Dwight D. Eisenhower

The White House
August 11, 1960

---

[1] 3 CFR, 1956 Supp., p. 55.

[2] 3 CFR, 1958 Supp., p. 78.

APPENDIX C

Verbatim Text of Finan Report Recommendations Concerning the ACC

APPENDIX C

VERBATIM TEXT OF FINAN REPORT RECOMMENDATIONS CONCERNING THE ACC

General Findings

I. The Air Coordinating Committee is a valuable mechanism for the coordination of aviation policies, programs, procedures and standards, and, as such, should be retained and supported by the participating Federal departments and agencies.

Virtually all representatives of the agencies which have taken part in the work of the Air Coordinating Committee or its principal components recommend the retention of the Committee and prefer it over any alternative mechanism for coordinating aviation matters of interagency concern. A review of the achievements of the Committee

From: Bureau of the Budget, Survey of the Air Coordinating Committee, Nov. 1959, pp. 5-50.

and actual observation of its current activity support these views.

The features of the present Committee which were most often mentioned as contributing to its usefulness are (1) its executive order status, including the right to bring matters which cannot be resolved unanimously to the President, (2) the high rank of the principal members of the Committee, (3) the hierarchic arrangement of divisions and subcommittees which makes it possible for matters to be considered and resolved at the most appropriate level, (4) the specialization at the lower levels which enables the best-qualified experts from the interested agencies to come to grips with problems in their fields, (5) the known availability of established components with approved terms of reference, (6) the knowledge of and confidence in the Committee which alternates, liaison officers and component members have acquired over the past nine years, and (7) an independent, full-time secretariat capable of taking the leadership in facilitating the work of the Committee.

II. The value and effectiveness of the Air Coordinating Committee can be substantially enhanced by the adoption and implementation of the findings, recommendations and guidelines set forth in the following pages of this report.

The general satisfaction of representatives of the participating agencies with the Air Coordinating Committee from an over-all viewpoint did not extend to many of the details of organization, procedures, agency participation and relationships with the aviation industry. Criticisms of the Committee were evaluated in the course of the survey and many were found to be well taken. If the Air Coordinating Committee is to achieve its full potential effectiveness and if it is to secure and maintain the fullest confidence of the member agencies, it should make every effort to correct the deficiencies revealed by the survey.

Specific Findings, Recommendations, and Guidelines

Specific findings, recommendations, and guidelines designed to improve the effectiveness of the Air Coordinating Committee are set forth and explained in the remainder of this report. To facilitate their presentation, they have been grouped under four sections. Section A is concerned with the organization and operations of the top Committee and with recommendations affecting all or a substantial part of the subordinate components. Section B is concerned with the elimination, reorganization or strengthening of individual components. Section C treats the participation of industry and non-government persons in the work of the Air Coordinating Committee. Section D contains recommendations relating to the secretariat.

A. The Air Coordinating Committee Organization and Operations

1. The present status of the Air Coordinating Committee, established by Executive Order of the President, is adequate and should be continued, but Executive Order 9781 should be replaced by a new charter incorporating changes recommended in this report, and adjusting the tone and emphasis to better serve current needs.

Throughout the history of the Air Coordinating Committee questions have been raised as to the status which it should occupy and the nature of its basic charter. At one time there was considerable sentiment, both in Congress and in the Committee, for statutory recognition of the Air Coordinating Committee. In 1948 the International Aviation Facilities Act (62 Stat. 450) required that the Air Coordinating Committee be consulted in connection with the establishment and operation of aviation facilities in foreign territories and specifically required unanimous approval of the Air Coordinating Committee prior to transfer of airport or airway property to a foreign government or an international organization.

The practical experience gained in nine years of operation has convinced most persons closely associated with the Air Coordinating Committee that it should have no statutory powers or recognition. It is now acknowledged that the value of the Air Coordinating Committee is largely derived from its flexibility and from its capacity to promote coordination without divesting any of the member agencies of their statutory powers. Any future effort to establish the Air Coordinating Committee on a statutory basis or to give it functions by law should be strongly resisted by the Committee as a peril to its present and future usefulness.

An executive order is desirable for the Committee since, through the President as the Chief Executive, it prescribes certain ground rules, terms of reference and general organizational features of sufficient importance to justify specification by the President.

An executive order enhances the prestige of the Committee without, however, altering its standing as a device through which the affected agencies can voluntarily coordinate related activities.

The present Executive Order should at this time be redrafted and reissued to effect certain changes in membership, to restate the interest of the President in the Committee and to require that each member agency reappraise the adequacy of the charter from its point of view.

2. The Federal Communications Commission should be reconsidered for full membership on the Air Coordinating Committee and should, in any event, contribute funds to the support of the components on which it regularly participates.

The Federal Communications Commission now has membership on the Technical Division, of which its member now serves as a vice-chairman. It is also represented on the Subcommittee on Aerodromes, Air Routes and Ground Aids (AGA), the Subcommittee on Airmen Qualifications (AMQ), the Subcommittee on Air Space, Rules of the Air and Air Traffic Control (ASP), the Subcommittee on Aeronautical Communications and Electronic Aids (COM), and the Subcommittee on Search and Rescue (SAR). The Federal Communications Commission is also active in and has membership on the Air Traffic Control and Navigation Panel.

The validity of FCC participation in these ACC components has been evaluated and the Commission has been found to have a major interest in the technical aspects of aviation. It is now somewhat handicapped by the lack of membership on the top Committee. Several instances in which the interest of the Commission in a pending item was overlooked were, in fact, encountered in the course of the survey. As one means of avoiding such oversights in the future, the Secretariat is now treating the Commission as a full member in the distribution of ACC documents.

In May, 1945, the Federal Communications Commission, in a letter to the Chairman of the Air Coordinating Committee, indicated its interest in the work being carried on by the Committee and suggested that FCC be invited to attend meetings on an observer basis with the privilege of participating in the discussions. On June 26, 1945, the Air Coordinating Committee advised the Federal Communications Commission that it was not necessary for the Commission to be represented. The letter did state that the Committee would be glad to include a representative of the Commission on any subcommittee in which the Commission would have an interest. In 1947 the Federal Communications Commission obtained membership in the Technical Division and its participation has since expanded to include the subcommittees and panels listed above.

Because of the rebuff which it received in 1945 at a time when the substantial concern of the agency in aviation matters had not been fully revealed, the Commission has been reluctant to initiate a new request for full membership. The Air Coordinating Committee should, therefore, consider taking the initiative in inviting the Federal Communications Commission to assume full membership, if such membership is determined by the Committee to be desirable. The invitation could be extended in the course of revising Executive Order 9781.

The Federal Communications Commission makes no direct financial contribution to the support of the Air Coordinating Committee or the Air Space Subcommittee. Regardless of what action is taken with respect to full membership, the Commission and any other Federal agencies regularly represented on a major component should be required to contribute to the support of the Air Coordinating Committee under an equitable formula.

3. The scope and intensity of the Post Office Department's participation in the Air Coordinating Committee have become so limited that its need for full membership on the Committee should be reevaluated.

The Post Office Department became a full member of the Air Coordinating Committee in March, 1946, and is specifically listed in Executive Order 9781. The department is represented on the Subcommittee on General ICAO Matters, the Economic Division, the Subcommittee on Aviation Information and Statistics and the Legal Division. As a practical matter, the department rarely takes part in the work of the Legal Division and the functions of the Subcommittee on General ICAO Matters are of a largely administrative character involving little direct impact on the Post Office Department. Its representation on the Economic Division is passive, and relatively few matters coming before this division or the Subcommittee on Aviation Information and Statistics warrant sustained participation by the Department. With the removal of its responsibility for subsidies, the justification for the full membership of the Post Office Department on ACC has been further diminished.

From time to time matters will arise in ACC in which the Post Office Department is directly concerned. However, these items may be sufficiently infrequent for the Department to adequately safeguard its interest by ad hoc voting participation as now provided for by paragraph 1(c) of Executive Order 9781. Some economies would be realized by the Post Office Department and the Air Coordinating Committee if, after study, it were decided that the Department should participate on an ad hoc basis instead of as a full member.

4. The three military departments should continue to have individual memberships in the Air Coordinating Committee but the Secretary of Defense should arrange for appropriate coordination within the Defense Department in dealing with ACC matters.

The Departments of the Air Force, Army, and Navy have individual memberships on the Air Coordinating Committee. The Department of Defense is represented on the Airport Use Panel and occasionally participates in the meetings of other components, but it does not have a membership on the Air Coordinating Committee. Shortly after the creation of the Department of Defense an attempt was made to replace the military departments on the Top ACC by a Department of Defense membership. This effort was unsuccessful since the Department of Defense was not prepared to come to grips with many of the problems taken up by ACC. In September, 1950, the Air Force and the Navy were again designated as members of the Air Coordinating Committee with the Air Force being made responsible for representing the interests of the Department of Defense generally and for advising the Secretary of Defense of matters of interest to him. In 1952, the Department of the Army became a member of the Air Coordinating Committee.

It would be undesirable at this time to seek to replace the direct membership of the military departments by a Department of Defense membership. However, there is considerable evidence that the Department of Defense needs to improve its internal arrangements for determining its interest in and its position on matters coming before the Air Coordinating Committee. Reliance upon the Air Force to protect Defense interests when two other military departments are serving on the Committee has serious disadvantages. It is suggested that the Department of Defense consider the establishment of an Army, Navy, Air Force, Defense Committee on ACC Matters charged with assessing the Department of Defense's concern with matters coming before the Top ACC, its panels and divisions, and with providing a medium for furnishing full advice and information to the Secretary of Defense.

5. When the Secretary of Defense has an immediate interest in a matter coming before the Air Coordinating Committee he can and should be directly represented on a voting basis in the appropriate component as provided for in paragraph 1(c) of Executive Order 9781.

The undesirability of regular membership on the part of the Department of Defense in the Air Coordinating Committee does not mean that the Secretary of Defense should not be directly represented by appropriate persons from his office when matters in which he has an immediate concern come before the Committee. As suggested in the case of the Post Office Department, the Secretary of Defense may, under an existing provision in Executive Order 9781, take part on an ad hoc basis with the right to vote whenever an item of substantial concern to the Department is on the agenda of an ACC component. The Office of the Secretary of Defense should also be included on the distribution list of such ACC papers as it may wish for its use and information.

6. The participation of a White House assistant in the work of the Air Coordinating Committee on a liaison basis adds materially to the effectiveness of the Committee.

During the present administration Mr. Charles Willis, an administrative assistant to the President, has attended meetings of the Air Coordinating Committee and has taken a direct interest in such phases of its work as the preparation of the Civil Air Policy Report. It is the consensus of the secretariat and representatives of the agencies that the presence of an administrative assistant to the President enhances the standing of the Air Coordinating Committee and encourages the members to make effective use of the Committee. Such a liaison relationship with the White House is also helpful in those instances in which the gravity of a matter or the inability of the agencies to agree makes it necessary to refer an issue to the President for decision.

7. Regulatory commissions represented on the Air Coordinating Committee or its components cannot, of course, deprive parties at interest of the right of hearing and judgment on the facts as provided by law, but such commissions can, and should, play a positive role in the Committee and engage in the freest possible exchange of information with other participating agencies.

From the first days of the Air Coordinating Committee, regulatory commissions participating in its work have been troubled by the implications of taking part in interagency decisions which might influence the subsequent exercise of regulatory or quasi-judicial powers. Elements of the aviation industry have also expressed concern lest a regulatory commission become prejudiced by taking part in the deliberations of the Air Coordinating Committee. There have also been a few instances in which a regulatory commission has agreed to one thing as a member of the ACC and failed to implement the agreement in specific cases that came before it.

The preponderance of evidence indicates that both regulatory commissions and the Air Coordinating Committee have benefitted from the active participation of the former. No better example could be provided than the current close cooperation between the Subcommittee on Air Space and the Federal Communications Commission on matters affecting the erection of television and radio towers. The Air Space Subcommittee considers the effect of each proposed tower upon the safe operation of aircraft and advises the Federal Communications Commission of its determination. The individual licensee may at any time demand a full hearing before the Federal Communications Commission but, as a practical matter, the FCC has always supported the position taken by Federal aviation agencies and coordinated through the Air Space Subcommittee.

The Civil Aeronautics Board is a major participant in both the technical and economics aspects of ACC committee work and benefits substantially from this activity.

8. The function of designating the Chairman of the Air Coordinating Committee should continue to be exercised by the President.

Executive Order 9781 provides that the President shall designate the Chairman of the Air Coordinating Committee from among the members. Since the issuance of that order in 1946, State Department, Civil Aeronautics Board and the Department of Commerce members have held the chairmanship. The present Chairman is the Under Secretary of Commerce for Transportation, who also serves as the Commerce member of the Committee.

There is strong sentiment among officials and staff of the participating agencies in favor of changing the present method of selecting a chairman. Advocates of a change are divided among those who favor rotation of the chairmanship, as is now done in several components of the Committee, and a chairman independent of the member agencies appointed by the President.

The alternative methods of providing for a chairman have been evaluated and rejected for two reasons. First, the principal objections to the present arrangement can be dealt with by the relatively simple measures and precautions. Second, the alternatives involve such serious questions and disadvantages as to discourage their use under present conditions.

Rotation of the chairmanship is a mechanical approach which has left much to be desired in other interagency committees in which it has been used. Under it each member serves a term without regard to the scope of his agency's interest or other relevant factors. The President is also deprived of the freedom to decide which official should head an interagency group charged with advising him on important policy matters. Rotation could, for all these reasons, do damage to the effectiveness and standing of the Air Coordinating Committee.

An independent chairman, presumably serving in the Executive Office of the President, has been considered in the past in connection with a number of interagency committees and has usually been rejected. The difficulties involved in establishing a position with significant stature without undermining the status of the agencies or complicating lines of responsibility have generally been found insurmountable. A successfully operating interagency group like the Air Coordinating Committee has little to gain from such an untried device as an independent chairman.

The demands for a change in the method of selecting a chairman stem largely from fears that the chairing agency will come to dominate ACC to the point where the other members will be deprived of an equal voice in the decisions of the Committee. More specifically, there is apprehension lest the continued designation of Under Secretaries of Commerce for Transportation as chairmen will lead to such a hegemony that other agencies will be discouraged from fully utilizing the Committee.

The equal status of all agencies serving on the Air Coordinating Committee is provided for in Executive Order 9781, which lodges no special powers in the Chairman. The establishment of the Management and Steering Group recommended below should provide further assurance that each member agency will have equal authority both in the substantive and the facilitative aspects of the Committee's work. Of course, it is manifest that among the obligations of the Chairman is to so serve as to leave no doubts as to the coordinate status of all members.

9. The effectiveness of the Air Coordinating Committee could be improved significantly by the establishment of a Management and Steering Group consisting of an alternate from each member agency. The Group should be charged with such functions as: (1) consulting with the Executive Secretary in the scheduling of meetings of the Air Coordinating Committee and the determination of agendas for such meetings; (2) reviewing the effectiveness and procedures of divisions, panels and subcommittees and working with the secretariat and component chairmen in correcting deficiencies; (3) assisting and guiding the secretariat in the discharge of its function; (4) reviewing annual budget estimates for ACC, and (5) developing solutions to any ACC management problems requiring attention of a high-level group with an interest in all aspects of the Committee.

One of the most serious deficiencies in the organization of the Air Coordinating Committee is the lack of a competent management group capable of maintaining surveillance over the ACC components and the secretariat on behalf of the principal members. The principals are busy men of subcabinet rank who are able to give but brief time to the details of ACC operation and who cannot, therefore, exercise effective supervision over a large number of components and the full-time secretariat. The secretariat is not in a position to supervise itself, nor can it be expected to exercise the authority required to come to grips with some of the problems raised by poorly functioning components. The Chairman of the Air Coordinating Committee is simply another busy principal. Moreover, any attempt on his part to exercise a greater degree of supervision over the Air Coordinating Committee would alarm other member agencies apprehensive of domination of the Committee by the Chairman.

The alternates are excellently suited to serve as a management and steering group because they have an across-the-board concern with the functioning of the Air Coordinating Committee; they are close to and have the confidence of the principal members; they tend to have a reasonably detailed knowledge of the Committee and its problems; and they are in assignments which permit them to devote a reasonable amount of time to the Committee.

In the past, there have been periods in which the Executive Secretary has met regularly with the alternates to consider the planning of agendas for Air Coordinating Committee meetings and related matters. To this day, the alternates have the responsibility for approving ACC positions on ICAO Matters, although this function has become perfunctory and is not fully understood by the alternates. In the preparation of the Civil Air Policy Report, the alternates provided the personnel of the so-called Special Liaison Group which reviewed policy papers developed by the divisions. There is considerable sentiment within the agencies for the establishment of a framework within which the alternates could, as a group, meet regularly with the Executive Secretary and take up matters such as those listed in the recommendation. There is every reason to expect that substantial improvements in ACC effectiveness would result from such meetings and that the work of the Executive Secretary would be greatly aided.

The terms of reference for the Management and Steering Group should be kept relatively simple and the meetings should be conducted on an informal basis. However, the chairman of the group should be carefully selected and should be drawn from an agency other than that providing the chairman for the Air Coordinating Committee.

10. Each agency should assure that among its alternates is a person who has the qualifications and opportunity to contribute constructively to the success of the Management and Steering Group.

Under the current procedures of the Air Coordinating Committee, each member designates one or more alternates. As indicated in the discussion of the preceeding recommendation, most of the members have designated at least one alternate who is admirably equipped to serve as a member of the Management and Steering Group. In the case of one or two agencies, however, the designated alternates do not seem to include a person in an immediate relationship to the principal or with a sufficiently broad interest in the matters coming before ACC to enable him to serve most effectively as a member of the proposed management and steering group. Each agency should, to the extent necessary, make changes in or additions to its alternates to assure effective representation on the new group.

11. The Air Coordinating Committee and the member agencies should reevaluate agency participation in each of the components of the Committee with a view to adjusting membership in the divisions, panels and subcommittees so as to best serve current needs and interests. In general, an agency should not seek membership, as contrasted to ad hoc participation, in a component in which it does not have a significant and continuing interest.

Some waste of manpower and unnecessary increases in the size of ACC components have resulted from membership by agencies which have relatively little interest in the matters being considered. The Air Coordinating Committee could be made more efficient and the cost of participation reduced if each agency would review the benefits which it is receiving from its participation in each of the divisions, panels and subcommittees on which it is represented. Whenever, after such review, the agency finds that it does not have a sustained interest in the matters coming before the component, it should terminate its membership. Such discontinuance of regular membership in a component does not, of course, preclude an agency from taking part whenever a matter of genuine interest to it arises.

12. The representative of an agency having a fully justified membership in a component of the Air Coordinating Committee, but lacking a significant interest in a particular matter under consideration, should feel free to abstain from voting and should exercise particular care not to protract discussion or to stand in the way of agreement.

It frequently happens that a matter coming before an ACC component does not directly concern an agency which has a fully justified regular membership. In those cases, the representative of the agency should feel under no obligation either to attend the portion of the meeting in which the item is being discussed or to take an active part should he be present. On the other hand, the representative of an agency lacking a direct interest should not be bound to silence. It often happens that a disinterested member of a component is able to contribute to the quality of decisions arrived at. However, when the disinterested member has made his point of view known to the agencies with a direct concern, he should be content to let those agencies arrive at their own conclusions and not press for acceptance of his personal preferences.

13. To be fully effective, the Air Coordinating Committee should have members of subcabinet rank, and these members should take an affirmative interest in the work of the Committee.

The present representation on the Air Coordinating Committee from agencies having a voting membership is drawn entirely from officials of subcabinet rank. Moreover, some of these assistant secretaries and board members attend the meetings of the Air Coordinating Committee with reasonable regularity. While it is true that attendance at such meetings constitutes an additional duty for officials already heavily burdened with other assignments, it is absolutely essential to the success and effectiveness of the Air Coordinating Committee that the principal members continue to be drawn from the subcabinet level. However, the mere listing as members of officials sufficiently high in their agencies is not sufficient. For ACC to reach its full potential, the principal members must regard the Committee as a useful aid in carrying out their aviation responsibilities, and must take a positive interest in assuring that the Air Coordinating Committee is utilized whenever it is the appropriate instrumentality.

14. Attendance at meetings of the Top Air Coordinating Committee should be curtailed to the minimum number of persons actually needed to dispose of the business at hand.

Three meetings of the Air Coordinating Committee were observed in the course of the survey. The first was attended by about 35 persons, the second by 30, and the third by 25. The last two meetings had agendas largely or wholly limited to one principal item.

These meetings had a relatively small attendance of principals, the number present being three (including two non-voting members), four (including one non-voting member), and one, respectively. The other persons in attendance were alternates, agency liaison officers, division members, technical staff or secretariat. It is, of course, to be hoped that among the improvements in ACC operations will be a more regular attendance of principals, but the question might be put as to the effect of so many onlookers upon both the attendance and the manner of participation of principals. It is not unreasonable to assume that many things which the principals might be willing to say in a smaller meeting, or one limited to themselves, will not be broadcast to a room full of assorted observers. Moreover, such large meetings waste manhours and detract from the business-like atmosphere which should prevail.

In the past, ACC has occasionally excluded all persons except principals and a few others whose presence was specifically requested by their principals. This was last done early in 1954 in connection with the selection of a new Executive Secretary.

It would be desirable in the future for meetings to be limited to principals, alternates attending for principals, essential secretariat staff, and possibly one additional individual requested by the principal. The standard representation of an agency for a meeting would thus be held to two. There should, of course, be a procedure under which industry representatives and specialists can be brought in to be heard or to give support in the discussion of a particular item, but this does not require that such persons sit in the conference room throughout the meeting. Some personnel of both the agencies and the ACC staff benefit from observing proceedings, but these benefits are not sufficient to offset the disadvantages of attendance at meetings where their presence is not required.

15. The chairman and the members of the divisions, panels and subcommittees of the Air Coordinating Committee should be officials of rank commensurate with the functions involved; they should be able to attend meetings regularly; and they should take a positive responsibility for the success of the components on which they serve.

Just as the effectiveness of Top ACC is dependent upon the regular and purposeful participation of subcabinet officers so each component is dependent for its success upon the suitability of its members. With respect to the divisions, it is essential that members be of bureau chief or equivalent rank in the civilian agencies, and that members from the military departments have the rank and organizational standing to represent their departments in the resolution of major policy and program matters. Subcommittee members should be drawn from the appropriate technical level and should be individuals with the qualifications required to understand and constructively participate in subcommittee discussions. Not infrequently, representatives serving on a component fail to attend regularly or are conspicuously unequipped to serve effectively. Each agency needs to take additional steps to assure that its representatives are qualified and participate faithfully.

16. The rapid turnover of members of the components of the Air Coordinating Committee creates a continuing problem of orienting newcomers. The orientation should be facilitated by the preparation of suitable informational materials.

The terms of reference governing the functioning of the ACC are found in widely scattered documents, many of which are unknown to persons newly appointed to membership. Moreover, informal rules of participation which add to the effectiveness of a member have never been converted to writing and have to be absorbed by newcomers through experience. It would be helpful if the Air Coordinating Committee, through its secretariat, would prepare some general orientation materials for the instruction and guidance of new members and supplement these general materials with specific information relating to the functions and operations of particular components.

17. The three budgets of the Air Coordinating Committee should be consolidated and consideration should be given to determining the share of the unified budget to be contributed by each agency on the basis of the number of major components on which it holds membership.

Each agency having membership on the Air Coordinating Committee contributes to an over-all budget from which most of the activities of the Committee and its components are financed. However, certain agencies contribute also to separate budgets maintained for the Airport Use Panel and the Air Space, Rules of the Air and Air Traffic Control Subcommittee, respectively. For the 1955 fiscal year, the approved budget for the Air Coordinating Committee is $119,790; for the same year, the budget for the Airport Use Panel is $15,654; and that for the Air Space Subcommittee is $38,630. Thus, the total current budget of the Air Coordinating Committee is $174,074.

The separate budgets for the Air Space Subcommittee and the Airport Use Panel have their origin in the fact that the predecessors of both these components existed prior to being brought into the ACC framework. The separate budgets were continued partly because not all agencies with ACC membership took part in the two specialized components.

The separate budgets no longer serve a useful purpose and they tend to create confusion as to the true cost of the Air Coordinating Committee. It is now the practice to divide each of these budgets into equal shares, with each participating voting agency contributing its portion. Once a unified budget is established, it would be preferable to develop a formula under which each agency share can be determined on the basis of the number of major ACC components in which it has a full membership. For budgetary purposes, it would appear sufficient to consider as major components the Air Coordinating Committee itself, the Technical Division, the Air Space Subcommittee, the Air Traffic Control and Navigation Panel, the Economic Division, the Legal Division and the Airport Use Panel. Under such a formula, an agency having membership on all seven components would make a maximum contribution, while an agency represented on but two or three would support a substantially smaller portion of the total ACC budget.

18. The member agencies should place plans, programs, or contemplated actions which require interagency coordination before the Air Coordinating Committee prior to entering into commitments or undertaking expenditures of funds which might stand in the way of coordinated interagency action.

The recent experience of the Airport Use Panel, which eventually led to a demand for modified terms of reference, and the difficulties encountered in reaching agreement on certain elements of the common system, graphically establish the importance of matters of interagency concern being taken up and resolved before any single agency proceeds to a point where it finds it difficult to accommodate its actions to the needs of other affected agencies. Strict adherence to this guideline will make it possible for the Air Coordinating Committee to limit the scope of interagency conflicts and will occasionally save substantial sums which would otherwise be misdirected.

19. Each member agency should review its use of the Air Coordinating Committee for the consideration of bilateral matters, and Executive Order 9781 should be revised to authorize the disposition of purely bilateral items outside of the Air Coordinating Committee.

Executive Order 9781 charges the Air Coordinating Committee with examining "aviation problems affecting more than one participating agency." Since the issuance of the order, a number of bilateral matters have come to be dealt with outside of the Committee by the two agencies directly concerned.

There is every reason why matters involving only two agencies should be disposed of through the relatively simple method of bilateral discussions. It is not to the advantage of any ACC component to have the time of its members consumed by matters in which the majority have little or no interest. It is, therefore, desirable that the Executive Order be revised to make it clear that agencies are not bound to use the ACC for the resolution of problems affecting but two agencies. Concurrently, each agency should review matters which seem to concern only itself and one other agency to determine whether or not they should be taken up outside of the Air Coordinating Committee.

A word of caution is needed in connection with this recommendation. No matter should be regarded as purely bilateral unless the agencies involved have substantial evidence that this is the case. Consultation with the secretariat, or an announcement to the appropriate component of an intention to proceed bilaterally, will often be desirable before an agency can safely conclude that direct negotiations with another agency are desirable. Attempts to treat matters of multiagency concern on a bilateral basis can be embarrassing and costly to all concerned and can undermine the effectiveness of the ACC.

20. The Air Coordinating Committee should not attempt final coordination of the views of the executive branch on draft legislation proposed to be presented to the Congress, nor should it seek to coordinate agency reports on legislation before the Congress; but in connection with the implementing of international conventions and some domestic problems, the Committee can appropriately take a more active part in the development of draft legislation.

Several years ago, the Air Coordinating Committee became deeply involved in the coordination of positions of the executive branch on aviation legislation. There was a belief among some members of the Committee and the secretariat that ACC could provide such coordination in lieu of the Bureau of the Budget, and this view had some support in the Congress. Consequently, ACC began to receive requests from congressional committees for its views and ACC responded with its comments. About the same time, efforts were being made to give the ACC statutory functions, or at least statutory recognition.

The dangers to the Air Coordinating Committee from becoming an agency in direct communication with Congress were eventually perceived, and the Committee ceased attempting to coordinate the reports of member agencies on pending bills. At the present time, ACC is strongly opposed to involvement in legislative coordination. In fact, there is evidence that the pendulum has swung so far that it is neglecting opportunities to develop legislation when it is the most appropriate mechanism to do so.

One example of a need to develop legislation is provided by the Mortgage Convention, ratified by the United States in 1949. Legislation to implement this convention within the United States was not needed at first because few other nations joined in ratification. The recent ratifications by Pakistan, Norway, and Brazil have brought the problem of implementation to the fore, and it is hard to conceive of a more suitable group to draft legislation in this area than ACC's Legal Division.

In the domestic field, an example of a potentially useful ACC role in developing legislation is provided by the work of the Economic Division's Subcommittee on Facilitation of Civil Aviation. This group has been drafting legislation to facilitate the admission into the United States of technical and supervisory personnel of foreign air carriers. Progress on completing coordination of a draft was delayed by reluctance on the part of an agency represented on the Subcommittee to giving its views without a request from the Bureau of the Budget. It does not seem inappropriate for an ACC subcommittee to act as a drafting group for legislation involving aviation. Certainly, such activity is consistent with the Bureau of the Budget's Circular No. A-19, revised, as long as coordination through an interagency group does not prevent the direct transmittal to the Bureau of the Budget of the views of individual agencies at such time as they are requested.

21. As a general rule, matters originating in the divisions, panels, or subcommittees should not be placed on the agenda of the Air Coordinating Committee until there has been full consideration and maximum resolution of issues in the subordinate components.

For the principal members of the Air Coordinating Committee to be in the best position to deal with a matter coming from a lower component, the issues and supporting factual data need to be defined and stated in a manner which permits high-level, but largely non-technical officials to arrive at a decision. When items placed before the Air Coordinating Committee are not in such form, the result is delayed action and dissatisfaction with the Committee on the part of the principal members. On the whole, the materials now being presented to the Committee do conform to this guideline, but there have been several instances in recent months in which a matter not ready for definitive ACC action has appeared on the agenda.

Consultation between the Executive Secretary and the proposed Management and Steering Group, as recommended above, should help assure that the matters taken up by the Top Committee are in shape for action.

The same rule applicable to the Top Committee also applies to the divisions. Subcommittees and working groups have, from time to time, placed before the divisions papers which were not thoroughly thought out and coordinated at the working level. Any subcommittee, working group, ad hoc committee or other component can contribute to the effectiveness of the Air Coordinating Committee by doing its work completely before referring a paper to a division or panel.

22. When a matter cannot be resolved at a lower level, it should be promptly placed on the agenda of the component occupying the next higher position in the Air Coordinating Committee hierarchy.

If anything is more harmful to the Air Coordinating Committee than having incompletely considered items placed on its agenda, it is to have matters which require action bottlenecked by a subordinate component. Such failures to act are caused by (1) ineffective committee work stemming from a weak chairman, inadequate membership or poor secretariat support, (2) overloading of a committee, or (3) futile efforts to reach an unattainable unanimity.

The first two of the reasons for failure to act can be remedied following the reevaluation of subordinate components recommended in this report. Delays caused by a reluctance to move without unanimity are based upon either a misunderstanding of the ground rules for ACC or an excessive deference toward a participating agency or its representative. Unanimity is required for ACC decisions, it is true, but a failure to agree at the lower levels should simply call for a referral of the matter to the next higher component -- with, of course, the issues clearly stated and the supporting documentation. It is a common weakness of interagency committees to wallow in indecision in the face of dissent or to seek agreement by watering down a decision to a disastrously inadequate common denominator. The ACC hierarchy provides a means of minimizing such shortcomings and should, therefore, be more fully and promptly utilized to force decisions in matters requiring action.

23. The unanimity rule which now governs all components of the Air Coordinating Committee should be retained.

The preceeding recommendation dealt with the importance of referring to higher components matters which cannot be resolved at lower levels in the Air Coordinating Committee. It is sometimes suggested that the Air Coordinating Committee would be more effective if decisions could be arrived at by a majority vote. Action by a vote of the majority is appropriate for boards or commissions with statutory powers. However, a majority vote in ACC has little meaning if, among the dissenters, is a member from an agency which must be relied upon in the implementation of a decision. Thus, the unanimity rule simply recognizes the facts of life of an interagency committee which depends upon the voluntary action of its members. As a practical matter, the full utilization of the hierarchy established by ACC will, as pointed out in the discussion of the preceeding recommendation, often make it possible to resolve a matter encountering disagreement at the lower levels.

If the unanimity rule prevents a decision on an important matter in the Top ACC, the Committee can and should refer the issue to the President for a decision. Such referrals should, however, take place only after the Secretary or Board of each affected member agency has received a report of the disagreement and has concluded that Presidential action is required. Disagreements affecting only two agencies should normally be taken to the President by a responsible agency head, not by ACC as an entity.

24. The informal action procedure for obtaining agency concurrences without formal meetings is a useful means of expediting decisions on matters coming before ACC components.

Many of the papers considered in the Air Coordinating Committee are disposed of at the division or ACC level by informal action; i.e., by referral of the pertinent documents to the member agencies for approval or disapproval. Within the agencies, informal action papers are circulated in accordance with the subject matter and the component of ACC involved. In those instances in which no significant dissents are voiced by the member agencies, the paper is considered approved by the Air Coordinating Committee. Although there are certain risks that perfunctory action by agencies or errors in the distribution of informal action documents could lead to a false assumption of unanimity, the savings of time fully justify the continuation of the informal action procedure under adequate procedural safeguards.

25. The authority to take final action on matters coming before the Air Coordinating Committee should be delegated selectively and only when the status of a component or the character of its functions so warrants.

To reduce the number of items coming before the Top ACC, the divisions, the Airport Use Panel, the Air Navigation and Traffic Control Panel, and certain subcommittees have been granted the authority to take final action on pending papers. The more extensive this delegation, the smaller the number of items which must be acted upon by the higher levels within ACC.

There is little agreement among persons participating in ACC as to the degree to which final action authority should be delegated. The argument in favor of further delegations contends that if all the subcommittees could dispose of matters on a final action basis, the work of the divisions would be reduced. Those opposing further delegations of final action authority hold that the members of most of the subcommittees occupy such subordinate positions within their agencies that they are not equipped to enter into final commitments. There is sufficient substance in the opposing argument to require that the burden of proof be on the readiness of the subcommittees to receive final action authority. In cases such as the Subcommittee on Aviation Meteorology, on which the Chief of the Weather Bureau and the principal weather officers of the Air Force and Navy serve, final action authority is clearly appropriate. Such authority is also justified in connection with the Air Space Subcommittee because of the extremely large number of specific technical determinations which it makes in the course of its work.

The delegation of final action authority to some of the subcommittees of the Technical and Economic Divisions under present circumstances could either hamper their work or lead to decisions being made which one or more of the participating agencies would later be compelled to repudiate. That this is not an academic consideration is demonstrated by the number of recent instances in which the Technical Division has made major changes in positions unanimously recommended by subcommittees. It is true that the members of the subcommittees could be directed to take no positions which have not been thoroughly cleared with their agencies, but the effect of such an approach could be to engender a rigidity in positions taken which would prevent or seriously delay adjustment and compromise. It would seem more prudent to give the subcommittees a somewhat freer rein, and to assure the acceptability of their decisions by review at the division level.

26. The Air Coordinating Committee cannot compel member agencies to implement its decisions. These agencies should, therefore, arrange individually to assure that implementation does take place or that the Committee is advised of obstacles which justify reconsideration of a decision.

One of the criticisms of the Air Coordinating Committee is that is has, on occasion, failed to implement its decisions. Such criticism cannot appropriately be leveled against the Committee for it neither has, nor should have, mandatory powers over its member agencies. It is nonetheless true that in the long run the standing and effectiveness of the Air Coordinating Committee will be strongly influenced by the seriousness with which participating agencies carry out their roles in the implementation of the decisions in which they take part. The most satisfactory approach would thus seem to be for each agency to establish the internal procedures required to advise appropriate officials of the Air Coordinating Committee's decisions and to follow up on actions taken pursuant thereto.

27. Additional measures are needed to assure that classified information and administratively confidential matters coming before the Air Coordinating Committee are protected against breaches or unnecessary dissemination.

Agencies desiring to coordinate aviation matters involving a high classification, or which are particularly sensitive from an administrative standpoint, have been inclined to avoid full or sufficiently early utilization of the Air Coordinating Committee because of their misgivings as to the extent to which such information would be safeguarded. The fact that members of ACC components, liaison officers, and many industry representatives have received security clearances, does not dispose of the problem. The safeguarding of classified or sensitive information also requires that the number of persons having access to that information be held to the absolute minimum. ACC procedures have almost guaranteed a wider dissemination of classified or sensitive information than that required to assure interagency coordination.

The Air Coordinating Committee should, therefore, establish special arrangements under which any agency may feel free to place classified or administratively delicate information before an appropriate component of ACC and with full assurance that disclosure will be held to the minimum required to achieve coordination. This can be done by authorizing each agency to introduce matters within ACC on a "controlled" basis. The agency with primary interest, or that taking the initiative, should have positive control over determining what agencies would be represented on the component taking up the matter and should be free to specify the distribution of papers bearing on the item. This would mean that the appropriate subcommittee, working group, or ad hoc committee would be limited to agencies believed to have a direct interest, and the normal distribution of papers through agency liaison officers would be replaced by a limited circulation of pertinent documents to the actual members of the working group. The agency with a major interest, or the group considering a controlled item, should also be authorized to place the matter directly on the agenda of a division or the Top ACC, and to require that access to the documents involved be limited to the members of the reviewing component.

A completely adequate procedure for reassuring agencies that the Air Coordinating Committee is an appropriate mechanism for considering classified or administratively confidential papers will require additional refinements and adjustments in the light of experience. However, the two basic principles of controlled participation and controlled distribution of documents, both to be determined by the initiating agency, would seem to be the essential foundations of a satisfactory system.

28. The Air Coordinating Committee should establish procedures and controls to limit distribution of documents to the minimum required for efficient conduct of its work.

The number of documents produced by the Air Coordinating Committee and its components is a source of surprise, if not amazement, to virtually everyone who comes into contact with the Committee. A study of the number of copies of documents distributed during the 1954 fiscal year revealed that the total was 145,000. The Department of Commerce received nearly 40,000 copies, the Air Force over 17,000, the Civil Aeronautics Board over 13,000, the Navy nearly 13,000, the Coast Guard over 10,000, the Department of State and Department of Army about 7,000 each, and the industry recipients about 8,000. While at first glance the volume of documents produced and distributed may appear excessive, there is little question but that most of the papers are generated as a necessary result of committee work. The secretariat, agency liaison officers, and to the extent required, the Management and Steering Group should, however, establish procedures to keep distribution lists current.

On September 21, 1954, the Executive Secretary requested the members of the secretariat to make a study of the list of persons receiving copies of ACC publications in addition to the designated members and alternates of components. Secretaries are also to be informed of requests upon the Document Section for copies of papers on a regular basis. This is a desirable procedure, but it needs to be supplemented by periodic reviews of document distribution lists both by the secretariat and by the participating agencies.

29. The work of components of the Air Coordinating Committee would be facilitated if agencies planning to propose substantial changes in pending papers would give the appropriate secretary sufficient advance notice to permit duplication and distribution of the changes prior to the meeting.

The survey revealed instances in which the work of a division or subcommittee was delayed by an agency introducing papers containing important changes or substitutions which had not been received or studied by the other participants in advance of the meeting. Such a procedure is natural in working groups developing drafts for later review by higher components, but at the subcommittee and higher levels, members are often guided by positions taken by their agencies on the basis of documents previously distributed. It is only natural that members of such components are often reluctant to give their blessing to substantive changes of which they were unaware until the meeting.

Admittedly, the urgency of a particular situation may prevent adequate notice and advance distribution of proposed changes, but agencies should make every effort to arrive at their positions in time to enable the component's secretary to put relevant additional documents in the hands of the other participants.

30. The State Department should continue to exercise its final authority over the size of delegations sent by the United States to international aviation meetings, but the Department should make further efforts to accommodate the recommendations of the Air Coordinating Committee.

Under procedures now in effect, the State Department exercises final authority over (1) whether or not the United States shall participate in an international aviation meeting, and (2) the number of persons to be included in the United States delegation. Since the United States is very active in international aviation matters, it virtually always attends meetings in which it has a discernible interest. However, there has been some friction between the State Department and other members of the Air Coordinating Committee over the number of persons to be included in United States delegations.

The State Department is responsible for deciding how the limited appropriations for participation in international conferences can best be used to advance the interests of the United States. The Department therefore takes the position that it must limit the size of delegations to international aviation meetings so as to assure that money will be available for conferences in other fields of foreign affairs. While admitting that the State Department does have a problem, many members of the Air Coordinating Committee and its components contend that State is not technically qualified to decide how many delegates will be required adequately to represent the United States in meetings concerned with international aviation.

There is substantial evidence that in the early years of PICAO and ICAO membership, the United States sent delegations of such size that they could be justified only on the basis of the training which the participants received. Certainly, more persons were sent than the immediate need to represent the Nation's interests required. On the other hand, the number of international aviation meetings has declined markedly in recent years. Technical meetings under the ICAO Air Navigation Commission have, for example, been reduced from fifteen in 1948 to three in 1953. Moreover, the size of the delegations has been cut down.

The Third North Atlantic Regional Air Navigation meeting which began on October 5, 1954, involved disagreement between the State Department and the Air Coordinating Committee as to the size of the delegation. The State Department insisted on a delegation of fifteen members, while the Air Coordinating Committee was unable to recommend less than sixteen members. The State Department refused to increase the number on the delegation. The gap between the ACC and State determinations. was finally resolved by the decision of the Coast Guard to send one member of the delegation at its expense.

The uneasy equilibrium created by conflicts in the points of view and responsibilities of the State Department and the Air Coordinating Committee as a whole can be maintained with a minimum of friction only by reasonableness on the part of all concerned. As the agency with the statutory authority, the State Department should avoid arbitrary action and should utilize ACC to achieve maximum agreement on matters relating to United States delegations to international aviation conferences.

31. The Air Coordinating Committee and its secretariat should improve the scheduling of work on United States positions for ICAO meetings so as to complete position papers reasonably in advance of deadlines.

It is almost the usual situation for a delegation to an international meeting to have to wait until the last minute for its instructions. Occasionally, the position papers will be in final shape a day or two before a conference, but often the delegation is handed its instructions as it boards a departing plane or receives them by mail after arrival. Because there are often last-minute crises, some of which require meetings of the ACC, and because critical questions should not be decided without full consideration, the tendency for the development of positions to drag on is both nerve-wracking and potentially injurious to the interests of the United States.

Of course, it is not easy to schedule preparatory work in the face of competing priorities, but a greater effort should be made to set and adhere to timetables which will assure that most positions are agreed to well in advance of the starting date of international meetings.

32. The Air Coordinating Committee provides a mechanism for periodic reviews of civil air policy, but the findings and recommendations derived from such surveys will reflect many compromises and will tend to emphasize policies which the participating Federal agencies are prepared to propose and implement.

The recent survey of civil air policy undertaken by the Air Coordinating Committee at the request of the President culminated in May 1954 in the release of a report substantially concurred in by all the participating agencies. The attainment of a virtually unanimous report dealing with many controversial areas of civil aviation policy was possible only because numerous compromises were accepted and certain particularly stubborn problems were sidestepped. While many of the persons who were closely associated with the preparation of the report acknowledge that a certain amount of watering down took place, they also feel that the survey was worthwhile for two reasons. First, it required each of the principal members of the Air Coordinating Committee and their staffs to focus attention on virtually the entire range of civil aviation policy and, second, because the final product was one which the participating agencies were prepared to accept and implement. There is every reason to believe that the Air Coordinating Committee could be profitably used for such reviews at intervals in the future as a means of forcing the aviation agencies of the executive branch to reexamine the policies by which they are being guided.

Dissatisfactions with the Civil Air Policy Report stem largely from the feeling that the document failed to promote new ideas or to rally public opinion behind urgent aviation problems. There is disappointment that the report lacks some of the characteristics of the reports of the President's Air Policy Commission of 1947 and the President's Airport Commission of 1952. It is certainly true that the Air Coordinating Committee will not review civil air policy questions with the detachment and with the willingness to recommend novel and imaginative solutions often expected of a temporary advisory commission drawn largely from persons not responsible for implementation. It should be recognized that a policy review by an interagency committee and advisory study by a non-Government group have different purposes and settings. Both should be used in accordance with the demands of particular situations and with an appreciation of their limitations.

B. Components of the Air Coordinating Committee

Prior to a discussion of specific recommendations relating to the status, organization, or methods of operation of individual components, a few general observations are in order.

The number of components functioning under the Air Coordinating Committee almost inevitably produces questions as to the need for so many standing units. The urge to streamline ACC by simply abolishing every component which is not meeting regularly or producing a comforting list of citable achievements becomes strong. Such a course would not, however, assure improvements in the Air Coordinating Committee. In fact, it could disrupt relationships and break down divisions of labor of real value to the Committee.

In this survey, the approach taken is to recommend abolition of those components which have clearly outlived their usefulness or whose residual or potential functions can be assumed by other components with more viable missions. Because none of the relatively inactive subcommittees has a full-time secretary or entails other significant administrative costs, there is virtually no expense involved in mere existence. On the other hand, a known membership and established terms of reference make it possible for a subcommittee to move quickly and with a minimum of organizational preliminaries when a problem arises in its field. Therefore, potential as well as present usefulness and the merits of alternative arrangements should be weighed along with present activity before a decision is made as to the future status of a subcommittee or other standing component.

1. The ACC Advisory Panel should be abolished.

The ACC Advisory Panel consists of fourteen private citizens with a background and interest in aviation matters. The Chairman of the Air Coordinating Committee also serves as the Chairman of the Panel, and secretariat services are provided by the Executive Secretary of the Air Coordinating Committee. The Adivsory Panel held its last meeting as a group on September 18, 1951. Although individual members of the Panel are, from time to time, consulted by staff of the Air Coordinating Committee, the ACC itself has made no recent use of the Panel. As a general practice, it would seem to be preferable for the individual agencies of the Air Coordinating Committee to obtain advice from suitable indiviv-uals outside the Government and not for the ACC as an entity to have an advisory panel. If a situation should arise in which the Air Coordinating Committee finds it desirable to solicit advice from a group of private citizens, it should establish an ad hoc committee for this purpose with its membership determined by the nature of the subject matter to be dealt with. Certainly there is nothing from past experience with the present advisory panel which would indicate that such a formally constituted group with a fixed membership will have any substantial future utility.

2. The ACC Industry Advisory Panel should be abolished.

The Industry Advisory Panel held its last meeting on July 18, 1952, when it took part in a joint meeting with the Air Coordinating Committee to discuss the report of the President's Airport Commission. The Panel has been unsuccessful because of the lack of common interest on the part of the various industry members. Moreover, alternative arrangements for representation of industry on ACC and its components have rendered the concept of a panel obsolete and indicate beyond any reasonable doubt that the Panel should disappear from the scene. It is not expected that there will be much in the way of industry objection to the formal abolition of a unit so lacking in usefulness.

3. The ACC Subcommittee on the Chicago Convention should be abolished.

This subcommittee, which was actively concerned for several years with the development of positions on proposed amendments to the Chicago Convention, has held no meetings since 1951. At the present time, there is little likelihood that any problem requiring consideration by this subcommittee will emerge. Once the subcommittee is abolished, any matters which might arise within its present field of responsibility can be dealt with by the Legal Division or the Subcommittee on General ICAO Matters.

4. The Aircraft Claimant Division should be abolished and its functions transferred to an Aircraft Claimant Subcommittee in the proposed Economic and Resources Division.

During the period of active remobilization following the outbreak of the Korean conflict, the Aircraft Claimant Division was charged with important functions related to civil aviation requirements and the determination of programs covering essential civil air carrier needs. With the passage of time and the alleviation of shortages of aircraft components, the division has become less active and is now concerned largely with a quarterly review of the air carrier aircraft production program. Status as a division is no longer warranted by its scope of responsibility, the gravity of the problems dealt with, or the character of its membership. As a subcommittee of an Economic and Resources Division, its present membership could be retained on a standby basis available for the consideration of any problem within its field which might arise in the future.

5. The Economic Division has fallen short of its potential and should be reconstituted as an Economic and Resources Division.

There are few matters coming before the Air Coordinating Committee which are so complex and which are so urgently in need of solution as those in the fields of economic policy. This was clearly demonstrated during the preparation of the Civil Air Policy Report when a majority of the papers were developed under the Economic Division. Except in periods of unusual pressure, such as that created by the President's request for a survey of civil air policy, the Economic Division has been unable to come to grips with, or to achieve a resolution of, most of the problems falling within its field of activity. The disappointing record of the division is partially attributable to the reluctance of the agencies to place questions of economic policy before it even when a need for coordination exists. It is also true however, that the division has proved unable to act on many of the problems referred to it. Some of the subcommittees and standing working groups have been toying with important questions of economic coordination for long periods without generating documents or proposals on which the division can take action.

It is to be hoped that, with the addition of responsibility for coordinating aircraft claimant and related aircraft manufacturing matters, the Economic Division will be so reconstituted as to (1) encourage the member agencies to more fully utilize its facilities, and (2) establish machinery and procedures to force prompt action on problems coming before the division. The proposed Management and Steering Group, the secretariat, and the reorganized divisions should make a systematic review of matters now deadlocked in the division for the purpose of expediting action.

6. The type and rank of membership on the Economic and Resources Division should be such as to enable it to deal effectively with the complex issues that should receive consideration by the Division.

In the process of replacing the present Economic Division with an Economic and Resources Division, each agency should reappraise its membership with a view to placing on the new division representatives whose standing in their agencies and whose qualifications will permit them to play a constructive part in the work of the division. Each of the members designated should be willing to devote the unusually close attention to the work of the new division required to get it off on the right foot and to acquire the reputation needed to encourage full utilization by the member agencies.

7. The Subcommittee on Facilitation of Civil Aviation needs to be strengthened both in terms of membership and agency support if it is to advance aviation facilitation as an important element in the foreign economic program of the United States.

The Facilitation Subcommittee of the present Economic Division includes in its membership representatives from non-aviation agencies such as the Justice Department, Agriculture Department, and the Department of Health, Education, and Welfare, since these agencies have the responsibility for administering the health, quarantine and immigration laws involved in the facilitation of border crossings by aircraft. In fact, it is upon these agencies, together with the Treasury Department, that the Air Coordinating Committee must largely depend for the success of its facilitation efforts.

The action agencies on the Facilitation Subcommittee have often been represented by subordinate personnel whose effectiveness in advancing facilitation measures has been disappointing. Recently, in an effort to stimulate the facilitation program, the Assistant to the President signed a letter to the heads of agencies represented on the subcommittee stressing that they should adopt and support aviation facilitation as an important element in the United States foreign economic program. If this letter is to have full effect, the agencies involved must participate on the Facilitation Subcommittee with greater energy and devotion to its purposes than has been the case to date.

8. The other subcommittees and standing working groups of the Economic Division need to be reviewed by the reconstituted Economic and Resources Division with a view to reappraising the need for each and assuring that each has the status and terms of reference required to best perform its functions.

In addition to the Subcommittee on Facilitation of International Civil Aviation discussed under the preceeding recommendation, the Economic Division contains a Subcommittee on International Aviation Facilities and a Subcommittee on Aviation Information and Statistics. The first of these subcommittees is charged with a mixture of technical and economic problems. No conclusion has been drawn as to the appropriateness of retaining this subcommittee under the proposed Economic and Resources Division. This decision should be made at such time as the new division is established and the scope of its responsibilities considered. The Aviation Information and Statistics Subcommittee is relatively inactive, but its field of responsibility is sufficient to appear to justify a continuing standing group in this area.

The Economic Division also has six standing working groups concerned with the economics of air naviagation facilities, international airmail, multilateral agreements, taxation, insurance requirements, and the Council of Europe. Several of these groups are active on a more or less continuing basis and would seem to warrant the status of subcommittees under the proposed Economic and Resources Division. Certainly, each should be carefully analyzed in terms of the status which it should have after the reorganization.

9. The Legal Division has, on the whole, performed its functions well but a chairman should be chosen as soon as practicable.

Of late, the principal functions of the Legal Division have involved the drafting and revision of international conventions involving intricate legal considerations. Most recently, the division has developed a United States position on a proposed aerial collisions convention. Some of the work performed by the division is not of its own choosing but, instead, originates from the insistence of the ICAO Legal Committee on taking under consideration certain legal questions which members of the Legal Division regard as having little practical significance. Since the United States is a member of ICAO, it is bound to participate in its deliberations, and the Legal Division has no choice but to develop positions which will protect the United States to the greatest extent possible.

As has already been indicated in the discussion of the Air Coordinating Committee's functions with respect to the development of legislation, the Legal Division has lagged in the preparation of drafts for such necessary legislation as that implementing the Mortgage Convention.

It is believed that the effectiveness of the Legal Division in planning its programs and disposing of its potential workload would be aided by the selection of a chairman. In the past, the member from the Civil Aeronautics Board has been chairman but after the resignation from the division of the last incumbent, the meetings have been chaired on an ad hoc basis. The uncertainty as to who should serve as the officially recognized chairman of the division should be promptly resolved.

10. The ICAO Section of the Legal Division should be abolished.

The Legal Division officially contains an ICAO section. This group has held no meetings for about four years and has been replaced by working groups specifically established to deal with international legal problems. No practical purpose is served by retention of the section.

11. The Technical Division has been one of the most successful and highly regarded of the components of the Air Coordinating Committee, but it could serve more effectively in the future if all the members were of the standing in their agencies warranted by the major technical problems coming before the Division.

Almost without exception, agency personnel who have served on or worked closely with the Technical Division regard it as a highly successful component serving a wide variety of useful coordinative functions for the member agencies. While it is true that experience with interagency committees has generally shown that they are more effective in dealing with specific technical questions than with problems of economic policy, the reputation of the division is a distinct asset to the Air Coordinating Committee.

The effectiveness of the Technical Division is somewhat hampered by the fact that not all of the agency members have a standing within their agencies which permits them to speak with authority in the division. Some agencies do have as their representatives the chiefs or directors of major bureaus, but others could profit by designating principal members on the division of more comparable status. Some of the lower-ranking members could be retained in a constructive relationship with the division by being placed on an alternate status. It is difficult to avoid drawing comparisons between the representation of some of the agencies serving on the Technical Division and the persons sent by the same agencies to the Airport Use Panel.

12. The subcommittee structure of the Technical Division should be thoroughly reexamined with a view to clarifying functions and adjusting terms of reference to current needs.

When the Technical Division was established in 1946, it assumed responsibility for a subcommittee structure rather faithfully patterned after the divisions of the ICAO Air Navigation Commission. Such a subcommittee structure was valuable at the time because it permitted the Air Coordinating Committee to work with ICAO annexes within a framework built around the then overwhelmingly predominant ICAO activity. With the decline in the relative importance of ICAO activities and with the changes in emphasis which have occurred in the aviation field in the past eight years, the Technical Division subcommittee structure, while still functioning with reasonable effectiveness, has begun to show signs of inadequacy. In some cases, the functions of the subcommittees have been recently restudied and their terms of reference modified. The constructive steps taken in past months to rescue the Search and Rescue Subcommittee from its previous doldrums and to induce it to undertake the long-delayed task of developing a national search and rescue plan is particularly commendable. The Air Space Subcommittee has likewise received relatively close scrutiny, and has undergone adjustments to enable it to keep pace with an extraordinarily heavy workload.

There is some demand for reducing the number of Technical Division subcommittees on general principles, but for the reasons indicated in the introduction of this section, this approach is not recommended. There is every reason to believe that some consolidations, such as a merging of the Aeronautical Maps and Charts Subcommittee with the Aeronautical Information Services Subcommittee, are practicable. Additional consolidations should await positive evidence that an increase in the scope of responsibility of a committee would not place before it such a wide rande of problems as to make it difficult or impossible to find members technically qualified to understand and resolve them.

Another facet of the review of the subcommittee structure should be directed toward the ICAO sections attached to several of the subcommittees. The decrease in the burden of ICAO problems being considered by some of the subcommittees may have rendered their ICAO sections obsolete. Moreover, it is possible that the vitality of a subcommittee and its control of work being performed under it would be enhanced by use of ad hoc working groups instead of ICAO sections.

13. The relationships between the Air Traffic Control and Navigation Panel and the subcommittees of the Technical Division concerned with the common system should be reviewed and adjusted to conform to current needs.

As indicated above, the subcommittee structure of the Technical Division and the terms of reference of many subcommittees have undergone relatively little change since 1946. The Air Traffic Control and Navigation Panel (NAV Panel) did not appear on the scene until 1948, when it was established under the Technical Division.

The largely technical character of the NAV Panel justifies its status as a component of the Technical Division. The intimate interrelationships between the Panel's work and that of several of the Technical Division's subcommittees also support its present location. However, the superimposition of the NAV Panel upon a previously existing subcommittee structure has created overlappings of fields of activity and confusion of responsibility. The demand for adjustments aimed at minimizing this overlapping and uncertainty is strong among the representatives of several of the agencies.

At present, there are a number of approaches which could be taken in attacking this problem. The NAV Panel could be abolished and its functions assumed by the subcommittees and the Technical Division. However, the need for a single unit directly concerned with all aspects of the common system is so great that this alternative is not recommended. Another choice is to place certain of the subcommittees most concerned with the common system directly under the NAV Panel, but such a step would add another layer to the Technical Division hierarchy and is of dubious merit. The most promising approach appears to be a revision of the terms of reference of the subcommittees to clarify relationships with the NAV Panel and implement an agreed-upon distribution of responsibility.

14. The relationships between the Air Traffic Control and Navigation Panel and the Radio Technical Commission for Aeronautics have become confused and should be clarified by the Air Coordinating Committee.

The Radio Technical Commission for Aeronautics was organized in 1935 through the initiative of the Department of Commerce and is now a nonprofit cooperative association composed of Federal agencies concerned with aviation communications and industrial organizations with a similar interest. The Executive Committee consists of representatives of eight Federal agencies and seven industrial organizations. The Assembly has about ninety private firms and associations and eight Federal agencies in its membership.

The Radio Technical Commission for Aeronautics has provided a means of bringing to bear the knowledge and advice of experts from both industry and the Government on matters relating to radio aids to air navigation, communication, and traffic control. It has conducted a number of studies of the "state of the art" in its field of interest. Recently, it was asked by the Air Coordinating Committee to make a study of the problems associated with the measurement of altitude.

In 1947, the Air Coordinating Committee requested the RTCA to undertake a study of the airway problems which were handicapping the development of postwar civil aviation. RTCA established Special Committee 31 of which, after thorough study, recommended the establishment of a single all-weather traffic control system. The report further proposed the creation of a permanent Air Traffic Control and Steering Committee to assure continuity in the implementation of the common all-weather system. The present Air Traffic Control and Navigation Panel was established to implement the report and was placed under the Air Coordinating Committee.

The fact that industry has full membership and a vote in RTCA inclines some of the non-governmental participants to prefer it over the Air Traffic Control and Navigation Panel (NAV Panel), as a forum in which to take up matters affecting the common system. On June 8, 1954, with the affirmative vote of the Government members, RTCA established a Steering Committee on a permanent basis to redefine the requirements of the common system. This development has brought into the fore the issue of NAV Panel-RTCA relationships. There is now a risk of friction between elements of the two groups, and the latent uncertainty as to the role of each has been accentuated. This awkward situation can, in large measure, be remedied by the initiative of the Air Coordinating Committee whose members also play a decisive role in RTCA.

This report cannot spell out in detail the division of responsibility which would produce the most satisfactory cooperation between the RTCA and the ACC. Certain factors do exist which should be considered.

In the first place, the RTCA has demonstrated its value for "state of the art" studies. The extensive and active representation of the industry, including manufacturers of equipment, makes it possible to focus the best expert attention available on the solution of problems studied by the Commission. Since members of the special committees often work more in an individual capacity than as organizational representatives, and since decisions are by majority vote, it is often possible to come up with recommendations of an imaginative and far-reaching character which are not watered down by compromises and the predilections of organizations.

On the other hand, RTCA is not a Government agency and, in spite of an overlap in membership, it is not a part of the ACC complex. The NAV Panel is the appropriate mechanism to achieve coordination among Government agencies and this fact should not be obscured by the way in which ACC members take part in RTCA. The determination of performance and operational requirements for the common system, and the continuing coordination of implementation of that system, should be lodged and retained in the Air Coordinating Committee.

15. The revised terms of reference being adopted for the Airport Use Panel can add significantly to the value and effectiveness of that component and should, therefore, be conscientiously implemented.

The Air Coordinating Committee has in recent weeks had under consideration a far-reaching revision of the terms of reference of the Airport Use Panel. This group, which coordinates the plans of Federal agencies for the utilization of airports, had suffered from an unsatisfactory chairmanship arrangement, had often been unable to take up a case until a major conflict had developed, had been compelled to hold frequent public hearings, and had lacked clear provisions for industry participation.

The new terms of reference replace the earlier non-Government chairman with a chairman designated by the Department of Commerce from among its full-time employees. They also provide for a separate non-Government advisory committee to consist of industry representatives, which group will periodically meet with the Airport Use Panel. Both these provisions have been approved and are being implemented.

The third major objective of the revised terms of reference is to assure that the plans of the various agencies which may significantly affect the use of an airport , are brought before the panel for coordination before presentation to the Bureau of the Budget and the Congress. The purpose is to head off possible conflicts between uses before they become public, politically-charged controversies. Difficulty was encountered in arriving at language which would effectuate this objective without delaying the programs of the airport construction or using agencies, but a compromise version was approved by informal action of ACC on October 5, 1954.

The work of the Airport Use Panel is often closely related to that of the Air Space Subcommittee. Sometimes it is difficult to decide whether or not a particular problem is chiefly one of air space or airport use. For this reason, the two groups and their secretaries should exercise care to minimize conflicts or duplication of effort arising out of the natural relationships between their fields of activity.

C. Industry Participation

One of the unusual features of the Air Coordinating Committee is the extent to which representatives of the aviation industry take part in the deliberations leading to Committee action. This participation by interested persons from outside the Government has variously been a source of concern or satisfaction, depending upon the component involved or the role played by the industry representatives.

After study of the manner and effects of industry partipation in the work of several components, it must be concluded that the results have on the whole been beneficial to the work of the ACC. Yet, there are dissatisfactions with the present state of affairs, and considerable in the way of improvement in ACC-industry relationships is needed.

1. **The present confusion in the relationships between industry and the Air Coordinating Committee needs to be clarified along lines understood by both the Federal and industry participants.**

The role of industry in ACC components such as the Search and Rescue Subcommittee and the Airport Use Panel has lately been studied in connection with revisions of their terms of reference, and has been clarified for these individual units. Other components have evolved more or less firm ground rules for working with industry representatives. Yet many Federal members, industry representatives, and component chairmen do not fully understand the status which should be accorded the industry in ACC work.

The practices within ACC with respect to industry participation have thus come to vary widely, partly because they have been determined on a component-by-component basis and partly because of the lack of firm guidelines for individual chairmen. The Economic Division, for example, only occasionally invites industry representatives to its meetings. The Technical Division's meetings are regularly attended by industry representatives, and executive sessions of the Federal members are rarely held. The Air Traffic Control and Navigation Panel has accorded industry representatives non-voting membership, including the right to make and amend motions. Several Technical Division subcommittees have either formally or as a matter of custom conferred on industry representatives a status approaching that found on the NAV Panel. The Airport Use Panel has recently decided to establish an advisory committee of non-Federal composition which will from time to time meet with the Panel. Top ACC often invites industry observers, but it also meets without industry representatives being present. It is also clear from the conduct of meetings of Top ACC that industry representatives do not have an official standing.

There is no question but that some variation in the nature and extent of industry participation is warranted by the differences in the functions and subject matter of the various components. Yet insofar as practicable, general rules should be established for the entire Air Coordinating Committee. Such general rules, when combined with specific, written supplementary provisions for the individual components, should dispel existing uncertainties and make it possible for chairmen to preserve correct relationships with a minimum of awkwardness. The guides established should take into account the other recommendations on industry participation set forth below.

2. Only representatives of Federal agencies should vote in the Air Coordinating Committee or its components.

According to the official terms of reference, only representatives of Federal members may vote in ACC or its components. This is a natural corollary of the status of the Committee as a coordinative device for Federal executive agencies. In the past, various elements of the industry have sought the right to vote, but such industry groups as the Air Transport Association no longer seek voting status for non-Federal participants. Some industry organizations are still pressing for voting memberships, but their positions cannot be accepted by the Air Coordinating Committee without doing violence to its position as an interagency committee.

It is important that component chairmen and members fully recognize that the industry does not have a vote. In some components, industry members do appear to vote and, in others, their dissent has the automatic effect of forcing the matter to a higher echelon -- the equivalent of a vote. Unless a Federal agency can be convinced that a case made by the industry is such that it should be taken to a higher component, industry objections should not prevent the action of a subcommittee, panel, or division from having the same force and effect which it would have had in the absence of industry protests.

3. Whenever the public interest will be advanced thereby, industry representatives should be afforded an opportunity to present their views and to take part in the discussion of matters under consideration.

The industry includes user and manufacturing groups which have a detailed understanding of many of the effects of decisions of the Air Coordinating Committee. By being present during the discussion of items, especially those of a technical character, the industry representatives can often present facts and evaluate the significance of proposals in a manner which greatly aids the component in reaching sound decisions.

When granted the right to participate, the industry representatives should do so with a recognition that the Federal members are responsible for decisions and that the component may have a heavy workload. Brevity to the extent consistent with the presentation of essential facts should be observed by industry participants. Moreover, when industry participation will not make a significant contribution to the work of a component, it should be curtailed.

4. Components having industry representation on a regular basis should be more willing to utilize executive sessions.

One difficulty which has arisen in divisions, panels, and subcommittees in which industry personnel serve on a regular basis is the tendency to discontinue executive sessions limited to Federal representatives. Chairmen either forget that such a device is available, or they and the Federal members become reluctant to use it for fear of giving offense to industry representatives. Yet there are few, if any, of the components of ACC which do not take up at least occasionally matters which can best be discussed or decided by the Federal members alone.

It may help to have the availability of the executive session stressed by the general and component ground rules recommended in this report. It may also be desirable to require that all subcommittees, panels, and divisions hold an executive session prior to adjournment of each meeting. It may happen that nothing will remain to be taken up in the executive session, but the opportunity to use it will at least exist in fact on a basis which will minimize embarrassment to all concerned.

Executive sessions should also be used whenever a matter is to be voted upon if the chairman of the component believes an executive session to be desirable, or any member requests one.

5. The right to place an item on the agenda of the Air Coordinating Committee or one of its components should be confined to the representatives of the Federal agencies.

Since the Air Coordinating Committee exists to coordinate the activities of Federal agencies, only the voting members should have the right to place an item on the agenda of a component. If an industry group has an item which it would like to see considered, it should approach the most directly concerned Federal agency and suggest that the matter be taken up in the ACC.

6. The Air Coordinating Committee should not consider matters which are, in effect, appeals of the industry from a decision made by a member agency under its legal authority.

Once an aviation agency exercises a responsibility vested in it by law, it may disturb or arouse the opposition of some affected private person, company, or industry group. The natural recourse of any affected party is to the responsible agency, but occasionally an appeal is directed to the Air Coordinating Committee.

Of course, an act or decision by an agency and adverse reactions by affected parties may involve some broader problem which can appropriately be taken up by the Air Coordinating Committee. An example is provided by a letter which the Overseas National Airways sent on July 15, 1954, to the Chairman of the Air Coordinating Committee. The letter protested a decision of the Civil Aeronautics Board relating to the application of the tariff provisions of the Civil Aeronautics Act to irregular air carriers conducting charter and contract services for the Government. The letter was referred to the Economic Division for study, but upon objection by the Civil Aeronautics Board the study was abandoned, as was proper. There is, however, the problem of achieving some reconciliation between the regulation of tariffs and competitive bidding in Government chartering of aircraft. This problem, in which the "part 45" operators are deeply involved, is one of the many wich need study and resolution by the proposed Economic and Resources Division and the Air Coordinating Committee. This problem could be placed before the Committee by any of several agencies without invading the statutory powers of the Civil Aeronautics Board.

7. The Chairman of each Air Coordinating Committee component should be responsible for enforcing the ground rules governing industry participation.

It will do little good to develop ground rules providing for orderly and constructive industry participation if they are not observed in the actual meetings of the components. The chairman must be looked to, and understand his responsibility for,holding discussion within proper bounds, for excusing non-Federal participants when appropriate, for safeguarding the right of Federal members to vote in executive session, and for seeing to it that an executive session takes place at the conclusion of each meeting. The present situation in which the Federal members of some components have never had an opportunity to discuss a matter by themselves will be ended only by tactful but firm administration of approved ground rules by those presiding over meetings.

D. The Secretariat of the Air Coordinating Committee

1. The full-time, independent secretariat of the Air Coordinating Committee is one of its most valuable assets and should be retained.

The independent, full-time secretariat has without question contributed much to the effectiveness of the Air Coordinating Committee. Although officials of the participating agencies have raised questions about certain aspects of the operation of the secretariat, they nonetheless regard it as an essential feature of the Committee and, on the whole, have a high regard for its efficiency.

2. The usefulness of the secretariat depends largely upon its independence from domination by any member agency, and every possible precaution should be taken to prevent such domination either in fact or in appearance.

The secretariat of the Air Coordinating Committee occupies space in the Commerce Department Building and also receives certain administrative services (position classification, accounting, procurement, duplication, etc.) from the Department. In most respects, however, the secretariat is an independent unit subject to the direction of the entire Committee.

In spite of the substantial independence of the secretariat, there are many persons in the member agencies who feel that it is beholden to the Department of Commerce and inclined to take its point of view. Much of this sentiment can be traced to the preparation of the Civil Air Policy Report, when difficulties arose over the function of the secretariat in receiving and editing papers developed by working groups and approved by the divisions. However, the very proximity of the secretariat to the Commerce Department, together with the fact that the Chairman of the Committee is from that Department, encourages apprehensions as to the secretariat's impartiality.

The survey revealed no evidence of a current bias toward any agency. The establishment of the proposed Management and Steering Group will, however, provide an organizational safeguard against domination by any single agency and should, therefore, help protect the secretariat from future suspicions on this score. Naturally, each member of the secretariat must do everything in his power to serve all member agencies with equal fidelity, and must avoid actions which could be construed as partial.

3. The secretariat should be alert and vigorous in all facilitative matters, but it should not take positions on substantive questions.

The readjustments occurring in the Air Coordinating Committee as the result of a change in administration, the appointment of a new executive secretary, and the preparation of the Civil Air Policy Report have produced questions both within the secretariat and the agencies as to the role which the former should play.

There are two types of functions which are carried on by the Air Coordinating Committee; namely, substantive and facilitative. The first involves the evaluation of the merits of items coming before the Committee and the reaching of decisions thereon. The second is concerned with the administrative support which enables the agencies to come together and apply their knowledge and authority to the reaching of substantive decisions.

The secretariat may have persons on it with technical aviation backgrounds but, regardless of such factors, it should avoid taking a position on any substantive question. Should the secretariat become a proponent of a long distance aid or a system of user charges and seek to promote its position, it would invade the responsibility of the members of the ACC and lose their confidence. Some persons in the member agencies are of the view that, in the preparation of the Civil Air Policy Report, the secretariat did go beyond its facilitative role by pushing for the adoption of certain papers in a form opposed by the Special Liaison Group and the working groups. However, there is substantial evidence that the secretariat is now aware of the need to set limits to its efforts to stimulate accomplishment.

The facilitative functions of the Air Coordinating Committee are in large measure best performed through the secretariat, and the secretariat really exists only as a facilitative agency. Facilitative functions include preparing agendas, notifying members of meetings, taking notes of meetings, preparing minutes, duplicating and circulating documents, advising interested persons of the decisions of the Committee, maintaining files and records, recommending and calling attention to schedules and deadlines, referring items to the proper component, and all related operations. The actual drafting of papers to reflect decisions of a component, assistance to chairmen in making components function smoothly, helping draft and revise terms of reference, preparing progress reports, and maintaining continuous liaison with agency representatives, are also facilitative functions. All these activities, plus any others which help the Committee to reach substantive decisions without seeking to determine their content, are appropriate for a secretariat. In fact, the more energetically the secretariat acts in the facilitative area, the more valuable it will be.

4. The secretariat of the Air Coordinating Committee is generally adequate for its present functions.

The secretariat of the Air Coordinating Committee serves the Top Committee, the divisions, the panels, and certain subcommittees. However, the facilitative support of most of the subcommittees and working groups is provided by the member agencies. For this reason, the full-time secretariat is only the exposed top of the facilitative iceberg, and the cost of the Air Coordinating Committee is by no means fully reflected in the three formal budgets.

The size of the full-time, independent secretariat and the amount of money which will be required for its support is dependent upon what the Air Coordinating Committee really wants done. If the higher components and some of the subcommittees are to be served by an independent secretariat, the present staff will be required. If the Committee wishes to reduce the central secretariat and its cost, it must either arrange for a more limited type of service, or have the agencies provide secretaries for more components. Such a curtailment would not produce a saving in the total cost of the ACC. In fact, a retrenchment of this sort is of doubtful desirability and is not recommended.

There are other functions which could be curtailed. The drafting of papers in the Legal Division could be done by the agency members and their staffs, but the members do not favor such a change. The services of the Documents Section could be cut back by discontinuing the writing of names of agency personnel on routed documents, but this would then have to be done by the Liaison Officers. The cartographic work of the Air Space Subcommittee could be moved to an agency, but the present arrangement seems to be efficient and is satisfactory to the members.

In short, no basis for recommending further curtailment of the secretariat exists unless the agencies are willing to agree on what services should be reduced or eliminated.

It would, thus, be best for the Air Coordinating Committee to review what it wishes done and then be prepared to divide the cost equitably among the participating agencies. The proposed Management and Steering Group will make possible a more searching and systematic consideration of future ACC budgets on behalf of the Committee than has heretofore been practicable. It is the present lack of such a mechanism for conducting general reviews of services and costs that is the major deficiency of the Air Coordinating Committee in the field of budgeting.

5. The authority and responsibilities of the Executive Secretary should be redefined and made commensurate with each other.

The terms of reference adopted by the Air Coordinating Committee assign certain functions to the Executive Secretary. These terms of reference fall short of present needs both in their omissions and their obscurity of language. There is particular uncertainty as to the responsibilities of the Executive Secretary over division secretaries and other personnel of the central secretariat.

Since divisions, panels, and subcommittees are not capable of exercising effective supervision over their secretaries, and since economical management demands that a single person assign work among secretariat personnel, it would be desirable to vest in the Executive Secretary a more complete authority over the assignments and tenure of the members of the secretariat than he now appears to have. The Executive Secretary should, of course, exercise such powers only after giving due consideration to the needs and preferences of the components affected. The general personnel policies of the Executive Secretary should also be reviewed from time to time by the Management and Steering Group.

APPENDIX D

Restatement of Objectives in Terms of Work Plan by PEDC, July 1967

APPENDIX D

RESTATEMENT OF OBJECTIVES IN TERMS OF WORK PLAN BY PEDC, JULY 1967

Source: U.S. Executive Office. Office of Science and Technology (Executive Summary) Recommendations for Updating and Improving the Federal Aircraft Noise Alleviation Program, July 3, 1967, pp. 3-4.

C. Work Plan. A year of experience in implementing the program has pointed up the need for re-emphasizing certain aspects of the program and re-orienting others. The following work plan is proposed:

1. Early adoption of national noise measurement standards and criteria for evaluation of noise, and continuous research to refine standards and criteria. Establishment, in due course, of international agreements regarding noise standards.

2. Determination of the magnitude of the aircraft noise problem in terms of noise exposure (which considers aircraft type, number of operations, etc.), population density and land use.

3. Development and analysis of alternative solutions and selection and implementation on a time-phased basis of appropriate technical, operational, land use and other actions.

   a. At least the following specific steps should be taken at the earliest practicable date:

      (1) Establishment of flight paths and procedures for minimum noise generation and exposure at those airports where aircraft sound is considered "noise."

(2) Establishment of feasible engine/airframe retrofit programs using existing state-of-the-art technology to reduce noise generation to the maximum practicable extent.

(3) Modification and application of the FAAP, HUD Urban Renewal Program, and other applicable Federal programs to insure that Federal financial incentives are made available to those communities which have developed feasible compatible land use plans.

b. At least the following should be continuously pursued and implemented as appropriate:

(1) Analysis and establishment of noise certification requirements.

(2) Establishment of research, development and study programs to formulate alternative solutions; development of cost-effectiveness and other rationale for ranking alternative solutions; and consideration of over-all planning, technology, socio-government and systems analysis aspects.

4. Development of cost allocation rationale and appropriate Federal financial assistance.

5. Encouragement of aircraft noise abatement communication and public information programs.

APPENDIX E

Excerpt from Summary Status Report, Federal Aircraft Noise Abatement Program

APPENDIX E

EXCERPT FROM SUMMARY STATUS REPORT, FEDERAL AIRCRAFT NOISE ABATEMENT PROGRAM.

III. SUMMARY STATUS

This section summarizes the status, as of April 1, 1968, of efforts being pursued in response to the recommendations of the March 1966 Office of Science and Technology Report entitled "Alleviation of Jet Aircraft Noise Near Airports."

Recommendations 1 and 2: Analysis of the Aircraft Noise Problem and Formulation of Appropriate Alleviation Programs and Guidance

The objective of work pursued in response to these recommendations is to improve the capabilities of noise affected communities in the vicinity of airports to more effectively cope with their respective aircraft noise problems.

Initial studies required for an analysis of the noise problems at John F. Kennedy, O'Hare, and Los Angeles airports have been completed.[1] An analysis of land use information for the Noise Exposure Forecast areas (NEF's)[2], in the environs of the three airports, currently provides the most reliable definition of the magnitude of the noise exposure problem that may be expected at these airports in the future. These analyses have also helped in designing further studies needed to identify effective techniques for land use change and control in the vicinity of the airport.

Land use analyses have shown that in the vicinity of JFK, the 30 NEF contour for 1965 bounds an area of 80 square miles, in which approximately 665,000 people already reside; by 1975, the

---

1. 1965, 1970, and 1975 Noise Exposure Forecast Areas for Chicago, Los Angeles, and New York International Airports, FAA Reports DS-67-10 through DS-67-17, August 1967.

2. An NEF area is one which is enclosed by a contour of constant NEF value which represents a measure of the noise level of combined aircraft operations and the subjective response thereto.

30 NEF contour is likely to expand to an area of 121 square miles, which will include more than 1,500,000 people in homes, and over 100 schools. Similar noise exposure conditions exist in Chicago, and Los Angeles, although there are definite differences in the degrees of severity of noise exposure in those two cities as well as differences in the options available in each area for alleviating or preventing noise exposure problems through land use planning.

Estimates of land use study areas set forth by FAA before the development of NEF's proved to be too small for ORD and LAX. Accordingly, work to enlarge original land use studies at these two airport areas, in order to ensure congruence of the NEF's and land use information for the second phase of analyses, has been undertaken.

An additional twenty-nine airports have been selected for the second phase. The selection includes a proportionate share of general aviation and small, medium, and large commercial airports, and locations where remedial, preventative, or a combination of these two actions appear most appropriate. The NEF's will be developed by a computer program which will be written to allow trade-off studies to be accomplished to determine the maximum noise reduction practicable at any given airport. The program will subsequently be used by the FAA to develop NEF's for all jet airports in the Nation.

At each airport studied, legal powers of the airport owner and the community to achieve land use compatability, through both remedial and preventative means, will be abstracted and analyzed.

Program efforts are directed to developing and implementing both preventive and remedial programs to achieve use compatability. Preventive programs will be developed to enable Federal, State, and local units of government to act expeditiously to keep appropriate areas surrounding existing and proposed airports free from incompatible uses in the immediate, as well as the long-range future.

In furtherance of the related objectives of Recommendation 2 of the original Interagency Program, a program of study and research is being implemented to evaluate the actual efforts of specific localities to abate aircraft noise, and to translate planning and land development programs into effective actions to achieve more compatible land usage in present or potential noise exposure areas. These studies will enable the program to develop and demonstrate procedures and to issue land use planning guidelines with which other localities may achieve both preventive and remedial relief from aircraft noise exposure.

Recommendation 3: Cost Allocation

In view of the likelihood that any effective program for coping with the jet aircraft noise problem may involve the expenditure of public and private funds, the question of how such additional costs are to be allocated among producers of aircraft, aircraft and airport operators, and users of commercial aircraft and others needed to be resolved. Accordingly, the FAA prepared a study of applicable economic relationships, and of the public policy issues which should be formulated to provide needed cost allocation rationale.[4] The study was based in part, on two analytical reports[5] prepared especially for the FAA.

These reports were not designed to respond completely to the requirements for a detailed cost allocation study, however, and only the FAA report contains a complete response. Conclusions of the FAA report are as follows:

1. Definite recommendations on funding and charging for new action programs must await the findings of study efforts now underway to determine the magnitude of the noise problem in individual metropolitan areas and the likely costs and effectiveness of the various ways to alleviate noise.
2. Federal Government financial assistance to local governments will probably be needed to ensure effective program implementation. Financial assistance to the aviation industry will apparently not be necessary.
3. The most appropriate form of financial assistance to local governments would be direct loans for which interest would be charged.
4. A grant program to local governments may be needed instead of, or in addition to, a loan program to ensure effective nationwide efforts to deal with noise.

---

[4] "Allocating the Costs of New Programs to Alleviate Aircraft Noise Near Airports," FAA Office of Policy Development, February 1967

[5] "Allocating the Costs of Alleviating Subsonic Jet Aircraft Noise;" Paul K. Dygert, University of California (Berkeley); February 1967; "Air Traffic Growth, Airline Finances, and Public Benefits in Relations to the Cost of New Programs to Alleviate Jet Aircraft Noise Near Airports; SARC; FAA Report 67/WA-1656, January 1967

5. Net costs of any assistance by the Federal Government whether loans or grants, should be recovered from the aviation industry--in effect, from the air travellers and shippers. Such cost imposition would not significantly retard the growth of civil aviation.

6. Assignment of cost responsibility for noise alleviation to airport traffic users is called for in the interests of an economically efficient allocation of the nation's resources. Indirect economic and national defense benefits of air transportation to the general public do not justify use of general tax revenues without recovery to pay the cost of noise alleviation.

7. Airport noise is a problem of conflict between residents near airports and the aviation industry. The important subject of equity in this problem must be faced first in program definition. Balancing the conflicting interest must be achieved when action programs are chosen.

Recommendation 4: Noise Measuring Methods and Evaluation Techniques

NASA and FAA are working toward the development of physical, psychoacoustic, sociological, and other research results needed to provide the basis for quantitative noise, evaluation techniques and standards which can be used by the FAA, airport and aircraft operators, and aircraft/engine manufacturers.

The FAA has proposed that aircraft certification regulations be expanded to include noise as well as safety, and legislation is now pending in the Congress which would enable the promulgation and enforcement of such regulations. For the purpose of further defining proposed noise certification regulations, the FAA is presently formulating, in cooperation with industry and professional organizations and representatives of interested foreign countries, acceptable definitions, noise standards, and measurement and analysis methods.

The aircraft noise certification scheme proposed by the FAA consists of the following major elements:

1. Unit of Measurement

   That the measurement quantity for the purpose of describing applicable noise levels be Effective Perceived Noise Level (EPNL) in units of EPNdB.

2. Location of Measurement Points

That aircraft should not exceed applicable noise levels at specific sideline, takeoff, and approach locations.

3. Absolute Noise Levels

That noise levels should vary with the aircraft by a defined reference to the following levels for a 300,000 lb. gross weight aircraft: 108 EPNdB at the approach and sideline, and 103 EPNdB at the takeoff measurement locations.

4. Climb Gradient and Power Reduction

That the takeoff climb gradient beyond a point of 3.5 nautical miles from the start of takeoff roll should be at least 6%. If required for compliance with the level established, a power reduction may be employed, but not until the aircraft has attained at least 1,000 ft. altitude.

5. Tolerances

That the specified levels may be exceeded at one or two points, provided that:

a. The total excess is not greater than 3 EPNdB;

b. The excess at any single point is not greater than 2 EPNdB; and

c. The total excess if offset by at least a corresponding reduction at the other points.

6. Variation with Distance Beyond the Measuring Point

That noise levels must be progressively less as the outward distance from the measuring points established above increase.

For an initial limited period, these tradeoffs may be applied to levels of up to 3EPNdB higher than the prescribed levels at each point. If this tolerance is used, the aircraft must be modified to comply with the prescribed levels within 3 years from the date of issuance of the noise certificate unless the manufacturer can satisfy the noise certification authority that it is impractical to do so.

7. Aircraft and Environmental Conditions for Measurement

That the test conditions required to show compliance with the applicable levels will be corrected to the maximum takeoff weight of the aircraft under specified conditions.

The FAA is coordinating the proposal with industry, and is studying aircraft applicability and effectivity dates. The proposed noise bill pending before Congress will provide for retroactive application of the standards if found feasible.

The state-of-the-art in psychoacoustics and sociological measurements as related to compatible land use and selection of criteria for aircraft designers and operators is considered adequate to support action programs in both areas now. The Effective Perceived Noise Level (EPNL) concept consisting of the Perceived Noise Level (PNL), modified to account for tones and duration, as defined in ISO R507 is now being used as the basic yardstick to develop noise exposure forecast (NEF) contours around airports and as the criterion the proposed scheme for aircraft noise certification. Interim standards can be selected and used on the basis of both immediate action and long-range planning. Future research will serve to further validate and refine the EPNL concept and its relationship to individual and community action. It has been assumed that by requiring aircraft to meet specified noise levels at specified locations under the most difficult conditions they will be improved at all conditions. This is probably a reasonable assumption for an interim requirement. However, to ensure minimizing total noise exposure a careful study will be required of the relationship between the noise exposures resulting from actual operations of the aircraft and total community disturbance. The advisability of periodic review and updating of the selected criterion does not negate the fact that the data is adequate for immediate and positive action.

As for the development of domestic standards, methods of measurement of aircraft noise and methods of evaluation of such measurements with respect to human response are specified or are to be specified in standards of the USA Standards Institute, having been promulgated through the sectional committees under the Acoustical Standards Board. In addition recommended procedures with regard to measurement are formulated by Committee A-21 of the Society of Automotive Engineers. Such procedures can also be recommended as USASI Standards, but up to the present time no standards have been created by that means. Recently that A-21 Committee has also been asked to assume initiating responsibility in the writing of standards related to aircraft noise for USASI under Sectional Committees S-3, Bioacoustics and S-1, Physical Acoustics. Thus far no draft standards have been put forward.

In the case of international standards, efforts under TC 43 (Acoustics) have resulted in the publication of ISO Recommendation R-507, "Procedure for Describing Noise in the Vicinity of Airports." This document describes measurement technique and a calculation procedure that yields both levels and contours of perceived noise level for different kinds and numbers of aircraft operations. Working Groups 12 and 13 of TC 43 are in the process of recommending amendments to R-507 that will permit the calculation of a noise-exposure quantity that involves both duration of individual events, number of events, and corrections for tonal components. In addition, these working groups have refined R-507 with respect to the analysis methods and will recommend it for vote by the member nations in the future. (It is of interest to note that the procedures in the R-507 and the proposed amendments are essentially the same as those proposed in the FAA Noise Certification Program.) The work of these groups has been supported enthusiastically by such international groups as the Conference on Disturbances from Aircraft Noise that was held in London in 1966 and a portion of the Interagency Aircraft Noise Abatement Program will be devoted to continued support and participation in international standardization.

Research efforts concerned with the sociological noise assessment aspect of the program include a NASA two-year contract with TRACOR, Inc., to study and assess community reaction to aircraft noise. Extensive data is being collected around eight major airports chosen to represent a cross section of the airports in the United States ranging in activity from high density to moderate jet operations. In addition to collecting social and attitudinal data, noise surveys are being made so that the community noise exposure will be defined by actual neighborhood noise measurements rather than by estimations based upon aircraft movements and geographical locations. Comparisons are being made of the different methods of noise assessment to determine their correlation with the socio-psychological data. Instrumentation has been developed to collect data by automatic recording where appropriate. Instrument design information and specifications are being developed to permit future monitoring of airport noise with simple, reliable, automated equipment for the purpose of making further assessments.

In summary, substantial research effort has been devoted to human response to aircraft noise. The work for the most part, conforms closely with the intent of the original Aircraft Noise Alleviation Program. But beyond that, work has notably progressed or been initiated on sociometric studies of noise and on aircraft noise certification. The state-of-the-art in psychoacoustics and related sociological measurements is not complete but is believed to be more than adequate to support aggressive action directed to the development of noise certification procedures and to request regulatory action from Congress. Additional work is being done on noise exposure forecast procedures and measurement yardsticks to increase the confidence level in their use as proper instruments for determining human response to aircraft noise.

Recommendation 5: Engine Noise Reduction

With the initial development of the program, NASA expanded the scope of its existing broad based noise research programs in order that priority attention could be given to obtaining an early solution to the fan noise problem. This effort was designed not only to accelerate basic research on the fundamentals of noise generation with application to advanced engines, but also to provide information for assessing research and development and direct and indirect airline operating costs in terms of PNdB levels of noise reduction. The objectives and status of the major programs in which NASA is currently engaged are summarized below.

A. Nacelle Acoustic Treatment

Contracts have been negotiated with the Boeing Company and the McDonnell-Douglas Aircraft Company to investigate means for suppressing the fan-compressor whine of subsonic turbofan airplanes with emphasis on noise alleviation during the landing approach phase of flight operations. In each case, the work consists first of analytical studies, model tests, and full-scale ground tests (utilizing a JT3D engine) to identify promising modifications to the inlet and fan-discharge ducts of typical nacelles. The initial research and development work will be followed by flight tests of 707-320/DC-8 airplanes powered by JT3D engines to confirm the initial study results and to investigate performance, operational, and safety problems. Economic factors will be studied throughout the program with a goal of establishing retrofit, new installation, maintenance, and direct operating costs associated with the nacelle modifications, together with benefits afforded by the modifications through improved utilization flexibility.

Contracts have been underway for over a year and both companies have developed materials, design techniques, and full-scale ground rig models for application to attenuating fan radiated noise from JT3D-3B engines.

Ground test studies conducted by McDonnell-Douglas on acoustically treated inlets using sound absorptive liners and concentric inlet rings has indicated that fan noise reductions of about 12 PNdb are possible. Similar results were experienced in fan exit noise by using sound absorptive liners in the 1/3 length fan discharge duct. The acoustic materials in these tests were principally fiber metals. This treatment is quite flexible in application, and should be able to be tailored to a wide variety of engine inlet designs. Studies of a "lightbulb" centerbody indicate noise reductions equivalent to that obtained with concentric inlet rings, and tests with a full length fan discharge duct configuration without any acoustic treatments have resulted in a 2 - 4 PNdb reduction over that of an untreated short duct design.

Boeing research on full length duct passages indicated a possible noise reduction of 12 PNdb to 15 PNdb with acoustic treatment. The acoustic material in these tests were principally non-metallic fibers. In this regard, for present fan jet engines, jet exit noise will become predominant when the inlet noise is reduced by 10 PNdb to 12 PNdb.

These acoustic treatment data, obtained at landing approach power conditions, are very promising, but further work is required to determine effects of treatment on engine/aircraft performance, weight and operating costs. The full scale nacelle flight tests planned by both contractors should provide the desired information.

Boeing research on a variable geometry 5-door inlet design which can be used to choke the inlet flow has resulted in inlet noise reductions of over 16 PNdb during landing approach power conditions. However, the effect of inlet sonic choke operations on engine safety, performance, and life will be examined before flight tests with inlet sonic choke devices are conducted.

Approximately 35 related aircraft noise research reports received from Boeing and Douglas as specified in these contracts will be listed in NASA's STAR and available in microfiche form by early fall.

B. Properties of Fiber Metal

Because of the good acoustic characteristics of fiber metals in nacelle duct treatments, a series of studies of their physical properties has been supported under contract to the Huyck Metals Company. Evaluation of such items as cleanability, freeze-thaw cycling, salt-corrosion, water saturation, air oxidation, fuel combustion, etc. are nearly completed.

In-house work is underway to document the static strength, fatigue life and dynamical behavior of various densities of fiber metal materials.

C. Quiet Engine Program

The objective of the quiet engine program is to provide an integration of existing knowledge with the generation of new technology that will be incorporated in an experimental turbofan engine to demonstrate noise reduction at the source. NASA in-house research on engine components to reduce noise at the source has been underway for the past year. Engine design studies and noise estimates are being made by two contractors, Pratt and Whitney and Allison. The specified engine parameters include a takeoff thrust of 20,000 - 25,000 pounds and a cruise thrust of 4900 pounds, with bypass ratio being examined through a range of 3 - 8, fan pressure ratio through a range of 1.3 - 1.7, compressor ratio of 15 - 30, and turbine inlet temperature of 1600 - 2100°F. Low fan tip speed is inherent in the design philosophy of the Quiet Engine, that is, 1000 feet per second or less. The Quiet Engine program had as its initial objective a minimum noise reduction below present turbofan engines of at least 15 PNdb during takeoff, and 20 PNdb during landing approach conditions.

Preliminary results of the Quiet Engine studies, when compared with the JT3D engine, indicate that fan noise on takeoff and approach could be reduced by up to 19 PNdb and 15 PNdb respectively, while a jet noise reduction of up to 19 PNdb and 8 PNdb on takeoff and approach were noted. When compared to the scaled JT9D engine, fan noise could be reduced by up to 7 PNdb on takeoff and approach, while jet noise reductions of 7 PNdb and 2 PNdb on takeoff and approach respectively were noted. The lower jet noise floor of the Quiet Engine was considered significant since the application of acoustic nacelle treatment could result in the jet noise floor becoming the limiting factor affecting the optimum overall noise suppression of high bypass ratio engines. Cruise SFC improvement of the Quiet Engine over the scaled JT9D of up to 5 percent was also noted.

The problems of integrating a quiet engine with an airframe are being studied by McDonnell-Douglas under contract to NASA. Nacelle design, nacelle placement, structural loads, and aerodynamic interference are being studied. Wind tunnel tests of model airplanes with model nacelles will be made. The economics of a quiet engine will be studied.

Research on the noise characteristics of candidate fans for the quiet engine is being planned. A facility for noise and performance tests of full-scale fans is now under construction at Lewis Research Center. A 72-inch single stage fan with a pressure ratio of 1.5 is now under construction.

This fan will be tested in a nacelle with and without sound absorbing treatment in the ducts.

Additional fan tests by engine manufacturers under contract to NASA are being considered for early initiation.

Sound absorption techniques applicable to high by-pass engines are being investigated utilizing impedance tubes, small-scale fans and a J-65 engine.

An effort is directed toward the use of ejectors as a means for jet noise suppression. Cold air jets have been employed in tests so far. Large-scale experiments using a J-65 engine are imminent.

It is concluded that the present state-of-the-art, represented by the technology associated with the JT9D (Boeing 747 aircraft) and CF6 engines (DC-10 aircraft), can provide a reduction of about 4 PNdB on takeoff and 6 PNdB on approach for uninstalled high bypass ratio engines in the 20,000 pound class. With nacelle treatment comparable to that of the JT3D nacelle program an additional suppression of 3 PNdB at takeoff and 5 PNdB on approach should be possible making a total noise reduction on takeoff of 7 PNdB and 11 PNdB on approach. The "7-11" PNdB reductions also represent the state-of-the-art noise reduction expected by acoustic treatment of current low bypass ratio fan engines.

D. Inlet Guide Vane Spacing and Aerodynamic Choking

NASA in-house studies are in progress using a 12-inch diameter three-stage transonic research compressor. Effects of inlet guide vane thickness and turning angle are being evaluated. Initial results indicate very large noise reductions are available from inlet guide vane choking and that variable geometry vanes are needed for practical application.

Smaller but substantial noise reductions are available due to adequate spacing between inlet guide vanes and rotor. Further tests on an engine are planned to compare with laboratory results.

E. Compressor Noise Prediction

A method for predicting the noise radiation patterns and the acoustic power level of an axial flow compressor from a knowledge of its geometry and operating conditions has been formulated under a contract to Wyle Laboratories. Application of this method to the prediction of the noise fields of two compressors for which the necessary data are available is planned as a critical test of validity.

F. Jet Exhaust Noise

Basic jet exhaust noise studies are being supported at New York University and at Syracuse University. Emphasis is on the use of additives to reduce shear gradients of subsonic jets and on the suppression of supersonic jets.

G. Noise Generated by Flow Discontinuities in Ducts

Under contract to Bolt Beranek and Newman, Inc., studies are being made of the noise generated by flow over appendages inside a jet engine. Such sources may be very important regarding the generation of broad band noise in high by-pass ratio engines and may dominate the noise sources in the jet mixing region. The nature and behavior of these sources and suitable methods of noise prediction are subjects for continued studies.

H. Helicopter Rotor Noise

Two studies are in progress at the Institute of Sound and Vibration Research and at the Rochester Applied Science Associates, Inc. The first of these relates to the "banging" phenomena and includes the definition of the physical mechanism of generation and a method of predicting its levels. The second relates to the vortex shedding noise of a rotor and is directed toward developing a vortex noise prediction method.

I. Atmospheric Propagation

Measurements have been made in flight for the purpose of better defining the atmospheric attenuation in the higher frequency bands and in establishing the variability of noise measurements due to atmospheric effects. Data reduction and analyses are being accomplished under contract by Bolt, Beranek and Newman, Inc.

In addition to the NASA engine noise reduction programs discussed above, the Federal Aviation Administration is also actively supporting research and development programs designed to predict and reduce noise at the source. Specifically, the FAA efforts are directed at:

1. determining the primary aircraft/engine performance variables that cause or influence the generation or propagation of noise and the development of prediction techniques;

2. developing guidelines for changes in normal aircraft/engine equipment and components to control the generation or propagation of noise; and

3. developing guidelines for special hardware to be installed in or attached to the aircraft/engine as either original equipment or retrofit to control the generation or propagation of noise.

The control of noise may take the form of over-all sound power reduction, sound pressure reduction in the direction of maximum radiation, a shift of noise to less annoying frequency bands, a changing of the tonal combination to a less discordant quality, or a reduction in signal to noise ratios.

The FAA has completed, in-house or under contract, a number of studies relating to the six major sources of gas turbine engine noise: core exhaust stream, fan exhaust stream, compressor blades, fan blades (inlet duct radiation) fan blades (fan exhaust duct radiation, and turbine blades). Of particular interest are two recently completed studies, and one currently underway, which are summarized below.

A. Study and Tests to Reduce Compressor Sounds of Jet Aircraft

Specialized laboratory facilities were designed for studying materials and techniques for reducing turbomachinery noise by absorption and choked flow. Various configurations of materials suitable for use on surfaces of engine ducts, guide vanes, struts, and splitters were investigated for sound absorption.

The effect of airflow on the reduction of sound was studied with a two-dimensional choked flow facility containing vanes simulating engine inlet ducts with guide vanes. Final tests were conducted with a large scale compressor having a weight flow of 475 pounds per second.

The important material properties of sound absorption treatment have been identified and cataloged. Extensive test data has been compiled to facilitate judgments of component materials for optimized composite configurations. Also, design curves have been developed for predicting the noise reduction through guide vanes that can be accomplished by virtue of sound propagating against the direction of flow.

Normalized design curves have been developed for predicting the effects of vane-blade number combinations on the sound power generated by compressors and fans.

The 475 pounds per second compressor demonstrated significant noise reduction due to air flow through the inlet guide vanes. Semi-empirical relationships between the compressor noise generation and transmission and various engine performance variable were established and a normalized prediction technique developed.

B. Model Freon Compressor Acoustical Studies

The purpose of this study is to conduct aero-acoustic testing of model compressors in a Freon-type atmosphere which permits high Mach Number operation at a fraction of the rotational speeds that would be required in an air atmosphere.

Testing was conducted in Freon 12 on a model CF-700 fan which has OGV's but no IGV's, and at top speed, transonic flow over the entire rotor with a tip Mach Number of 1.24. Also, testing was conducted in Freon 12 on a model TF-39 outer panel fan which has both IGV's and OGV's, and at top speed, supersonic flow over the entire rotor with a tip Mach Number of 1.35.

Wide range performance tests, from surge to choke, were conducted on the model CF-700 fan in atmospheres of Argon-Freon 12, Freon 23, Freon 12, and Freon C318. The purpose was to verify and extend the acoustic scaling relationships.

Acoustic near-field tests with probes were conducted for the purposes of correlation with acoustic far-field tests, detection of impending stall, and evaluation of stall patterns.

Special near and far-field tests were conducted for the purpose of correlation with full scale tests made on the Convair 990 and Pan Am Falcon aircraft which contain large scale versions of the test fan component.

C. Acoustic Far-Field Prediction Method for Coaxial Jet Flows

An acoustic far-field prediction method applicable to coaxial jet flows is currently being developed for varied entrance conditions. The flow parameters to be included will be area ratio (secondary to primary), axial position of secondary exit plane with respect to primary exit plane, ratio of secondary to primary velocity, primary stream pressure ratio, and ratio of secondary to primary stream total temperatures for a given secondary total temperature. The range of these parameters will correspond to that anticipated for near-future aircraft engines.

An experimental model-scale program will be conducted in an anechoic chamber to aid in the development of the method and to establish confidence levels in the prediction procedure. The measured flow profiles will be related to the acoustic far-field characteristics in validation of the prediction method.

The effect of non-zero flight velocities on the acoustic far-field will be studied and alternative experimental facilities and approaches to establish this effect will be evaluated.

D. Fan and Compressor Noise Prediction

This program is presently under negotiation with contract award scheduled in FY 68. Its goals are the:

- Development of relationships which define fundamental noise generating mechanisms.

- Establishment of functional relationships and constants between the various noise contributors.

- Verification of noise prediction technique.

- Noise reduction prediction and development.

- Noise measurements on large scale supersonic fan test vehicle.

- Experimental evaluation of fan noise reduction methods.

- Correlation and integration of experimental and theoretical data.

Recommendation 6: Landing Approach Procedures

Studies are being conducted which involve changing landing approach procedures to minimize community noise problems, and of the potential safety problems involved therein.

The FAA, in cooperation with NASA, has developed and is testing a two-segment approach procedure which would have an aircraft approach the airport at an altitude higher than is the practice today until it is approximately three nautical miles from the end of the runway, at which point it would assume a normal approach glide slope angle.

Funds have been released to provide for the procurement of four engineering models of a vertical flight path computer which will provide the above noted capability to fly a two-segment noise abatement approach under VFR conditions. An intensive evaluation of this equipment will begin approximately July 1, 1968. The four computers are programmed to be installed in the following FAA aircraft: B-727, B-720, Lockheed Jetstar, and Beech Queen Air.

NASA has also been conducting a separate series of tests over a period of several years to explore operating problems associated with the use of steep approaches. Tests on a wide variety of aircraft have indicated practical upper limits (roughly 6°) to the glide slope which could be flown under simulated instrument flight conditions by research pilots and have also indicated an area of research which must be further pursued to provide safer and more accurate flight path control. This area, known as Direct Lift Control (DLC), is a means of changing aircraft position vertically along the flight path, whereas more conventional flight control systems (elevator/stabilizer) rotate the aircraft before any build-up in lift or vertical displacement is achieved.

Practical applications of direct lift control to aircraft to permit the use of steeper approach paths are difficult to predict at this point in the research program. DLC systems in one form or another will be required for aircraft in the size class of the "jumbo" jets and the SST. Practical application of the results of NASA research in noise is a matter which involves the economics of aircraft operations, and until research has been completed and potential gains weighed against costs answers will not be forthcoming.

Recommendation 7: Climb-Out Procedures

Another aspect of the program involves standardizing noise abatement takeoff procedures which represent optimum techniques for reducing noise exposure consistent with safe and reasonable operation of the aircraft.

A two-segment noise abatement takeoff profile has been developed and implemented at Washington National Airport (WNA). It consists of an initial rapid climb to a specified altitutde or DME fix, followed by a thrust reduction calculated to maintain a reasonable positive climb gradient. Reduced thrust is maintained until the aircraft is crossing the ten mile DME fix at which time standard enroute climb power can be used. This procedure is being used for two and three engine air carrier aircraft as well as executive jet aircraft.

The FAA is now engaged in developing, in cooperation with the industry, a standardized noise abatement takeoff profile for heavier, four engine aircraft. Additional technical problems need to be considered. These involve the proper selection of an altitude for initiation of a thrust reduction, and selection of appropriate power settings after the thrust reduction.

The FAA has established a regulatory project which will permit the standardization of climb-out procedures to be used at all airports, and is currently circulating a proposed Advisory Circular which recommends criteria to be used in implementing a noise abatement takeoff profile. It is anticipated that the Advisory Circular will be published in the near future.

There do not appear to be any constraints that will prohibit implementation of this recommended program. Guidance from the FAA's Air Traffic Service has been furnished to FAA Field Facilities pointing out the necessity of implementing air traffic procedures at noise sensitive airports that are designed to minimize noise exposure by overflying the least densely populated areas. This program is continuing in nature and there are no constraints other than those associated with high density terminal operations that may prohibit implementation.

It should be borne in mind that there are certain communities located with respect to some airports that require overflights if aircraft are to be operated safely into and out of the airports. Therefore, there are limits to what can be accomplished in the operational area for purposes of noise abatement.

Recommendation 8: Compatible Land Use

The objective of this phase of the program is to develop practicable approaches to a coordinated Federal program for stimulating airport community development in directions which would tend to anticipate or ameliorate community aircraft noise problems.

The Department of Housing and Urban Development organized a Task Force to pursue this objective under the Chairmanship of the Assistant Secretary for Metropolitan Development. Assignments were given to representatives of the Departments of Interior, Commerce, Agriculture, Defense, Health, Education and Welfare, and HUD, as well as FAA, NASA, and the Federal Home Loan Bank Board. These representatives reviewed and analyzed their respective programs to determine the potential for assisting local communities in achieving land use patterns more compatible with aircraft noise.

Approximately 70 such programs were identified. Initial responses indicated that the potential leverage of the existing program to affect land development around airports was slight and at best were extremely difficult to assess on a program-by-program basis. A March 22, 1967, memorandum from the President to heads of all Federal departments and agencies directing that explicit account be taken of aircraft noise whenever it is relevant to their various programs was a result of and substantial assistance to the work of the Task Force.

The Task Force work also resulted in specific coordination arrangements being established between HUD and FAA at the regional office level for notifying FAA of projects proposed under the 701 Urban Planning Assistance Program and the Open-Space Land Program administered by HUD. FAA informs HUD whether there is an "airport interest" or "relationship" concerning the proposed project. If so, HUD applicants and FAA field staff are brought together to determine what action should be taken at the local level. More recently, the Renewal Assistance Administration of HUD issued a Local Public Agency Letter requiring closer coordination with the FAA in the early stages of urban renewal project planning. The letter establishes a positive procedure to assure that FAA is advised of the initiation of local Community Renewal Program and the specific planning and urban renewal projects and the preparation of General Neighborhood Renewal Plans to permit such activities to take account of airport operations and development plans.

Current work of the Task Force is directed toward introducing or strengthening requirements for taking appropriate account of airport noise in the processes of approving requests for Federal assistance for community planning and for construction of specific facilities. Drafts of revised program requirements have been prepared. Under the FHA mortgage insurance programs, no new construction is accepted for insurance if it is located in an area of severe aircraft noise exposure as defined by FAA noise criteria. Study is also being given to development of procedures to assure that facilities assisted under the HUD Public Facilities Loan and Grant Programs do not contribute to incompatible development in severe noise areas. Comprehensive planning assistance programs used by local and regional agencies to provide a basis for rational and orderly community development are also being reviewed for the incorporation of planning standards relating to aircraft noise.

The design for a Metropolitan Aircraft Noise Abatement Policy Study is based on land use information gathered pursuant to the original OST Recommendation 2 in the vicinity of JFK, ORD, and LAX airports, and is intended to reflect different types of aircraft noise exposure problems and local planning and development opportunities to be considered. The study design includes three additional airport areas according to the classes of airport areas recommended for further study by the PEDC subcommittee. These airports represent a variety of airport growth, land use planning, and community exposure conditions, and afford opportunities for testing various methods of achieving preventive and remedial relief from the problem of excessive aircraft noise in the environment. The studies have been designed to take into account the substantially different levels of opportunities for achieving land use compatability near existing airports in built-up areas as distinct from those areas not yet developed.

Additional Recommendation: Sound Insulation of Houses

A conclusion of the original Interagency Program recognized the need for experiments in building technology to demonstrate and test techniques for insulating housing in noise locations. This recommendation reflected the statutory obligation of the Department of Housing and Urban Development to conduct studies of noise insulation for the purpose of relieving property owners who have experienced economic loss and other hardship as a result of exposure to excessive aircraft noise. It has been recognized that insulating dwellings against the intrusion of aircraft noise may provide a means of achieving at least partial compatability between residential development and airports in locations exposed to high levels of noise. The results of noise insulation studies prepared and scheduled for field testing by the FHA are expected to provide means of evaluating noise insulation as an alternative to land use change or the encouragement of housing or other facilities with appropriate noise insulation.

Additional Recommendation: Legislation

Another conclusion of the original program expressed the need for noise certification legislation. Consequently, the administration submitted an aircraft noise bill (S.3591/H.R. 16171) to the 89th Congress in July 1966 which empowered the Administrator of the FAA to promulgate noise standards and to exercise all of the regulatory and certification authority contained in Title VI (now limited to safety) on the basis of such noise standards. Such certification authority covered airmen, aircraft, air carriers, airports, and air agencies. Hearings on the bill were held before the Transportation and Aeronautics Subcommittee of the House Interstate and Foreign Commerce Committee on October 12, 1966. No congressional action was taken during this session.

The Administration bill submitted to the 90th Congress (S.707/H.R. 3400) differs from the prior bill in that the phrase, "aircraft noise," includes "sonic boom," and the noise authority is vested in the Secretary of Transportation rather than the Administrator of the FAA. Also, the authority for regulation is limited to specific certificates rather than all certificates issued by the Administrator.

The proposed legislation would complement existing authority conferred by Section 307(c) of the Federal Aviation Act which is properly construed as authorizing the promulgation of air traffic rules and regulations governing the flight of aircraft for the protection of persons and property on the ground from aircraft noise and sonic boom. As of April 1, 1968, the legislation is still in the Transportation and Aeronautics Subcommittee.

Source: U.S. Dept. of Transportation. Office of Noise Abatement. Summary status report. Federal Aircraft Noise Abatement Program. Washington, 1968, pp. 3-21.

APPENDIX F

Presidential Documents Associated with FANAP

APPENDIX F

PRESIDENTIAL DOCUMENTS ASSOCIATED WITH FANAP

Source: Weekly Compilation of Presidential Documents
March 1966; March 1967.

1. Transportation for America

The President's Message to the Congress.
March 2, 1966

EXERPT

✓ AIRCRAFT NOISE

The jet age has brought progress and prosperity to our air transportation system. Modern jets can carry passengers and freight across a continent at speeds close to that of sound.

Yet this progress has created special problems of its own. Aircraft noise is a growing source of annoyance and concern to the thousands of citizens who live near many of our large airports. As more of our airports begin to accommodate jets and as the volume of air travel expands, the problem will take on added dimension.

There are no simple or swift solutions. But it is clear that we must embark now on a concerted effort to alleviate the problems of aircraft noise. To this end, I am today directing the President's Science Advisor to work with the Administrators of the Federal Aviation Agency and National Aeronautics and Space Administration, and the Secretaries of Commerce, and of Housing and Urban Development, to frame an action program to attack this problem.

I am asking this group to:

- --study the development of noise standards and the compatible uses of land near airports,
- --consult with local communities and industry,
- --recommend legislative or administrative actions needed to move ahead in this area.

EXERPT

2 Alleviation of Jet Aircraft Noise

Memorandum to the President From the Special Assistant for Science and Technology. March 18, 1966

March 17, 1966

Memorandum for the President

Your recent Transportation Message highlighted the problem of jet aircraft noise in these words:

"Aircraft noise is a growing source of annoyance and concern to the thousands of citizens who live near many of our large airports. As more of our airports begin to accommodate jets and as the volume of air travel expands, the problem will take on added dimension.

"There are no simple or swift solutions. But it is clear that we must embark now on a concerted effort to alleviate the problems of aircraft noise. To this end, I am today directing the President's Science Advisor to work with the Administrators of the Federal Aviation Agency and National Aeronautics and Space Administration, and the Secretaries of Commerce, and of Housing and Urban Development, to frame an action program to attack this problem."

In October 1965 I convened an ad hoc Jet Aircraft Noise Panel to examine the relevant technical aspects of this subject and its many associated economic, sociological, governmental and legal issues. The members of this Panel were drawn from the airframe and aircraft engine industry, the airlines, the field of land use planning and federal and local government agencies.

I am pleased to be able to present to you the report of this Panel entitled "Alleviation of Jet Aircraft Noise Near Airports." This report outlines the Panel's unanimous views concerning the reduction of engine noise, the measurement of noise levels, noise standards, patterns of aircraft operation near airports, and compatible land utilization. It provides a set of recommendations in each of these areas with suggestions for their future implementation. The principal recommendations are:

- Initiation of Federally supported studies of the expected scope of the noise problem through 1975 and of the public and private programs which will be needed to combat the problem.
- Creation of a high level Federal Task Force to undertake, on an urgent basis, a "systems" type analysis of the problem in the vicinity of the Kennedy, O'Hare and Los Angeles airports, the analysis to be extended to other affected areas as soon as practicable.
- Development of valid, broadly applicable standards of noise measurement.
- Pursuit of a definitive technical study pointed toward a reduction in noise levels produced by jet engines and by aircraft, together with a determination of the costs associated with the various levels of improvement which may be technologically possible.
- Establishment of a Task Force to investigate methods for Federal participation in a coordinated program for compatible land utilization in the vicinity of airports.
- Starting an effort to identify and place into effect any modifications to operating procedures and take-off or landing techniques that would reduce noise without compromising safety.

I believe that these recommendations provide a useful basis for my work with the Administrators of the Federal Aviation Agency and National Aeronautics and Space Administration, and the Secretaries of Commerce, and of Housing and Urban Development, in responding to your direction in your Transportation Message to frame an action program for the alleviation of jet aircraft noise near airports.

Donald F. Hornig
Special Assistant for
Science and Technology

Note: The report, entitled "Alleviation of Jet Aircraft Noise Near Airports, A Report of the Jet Aircraft Noise Panel (Without Appendix), March 1966" (9 pp., Government Printing Office, 1966) is made available with the release.

3. Aircraft Noise and Land Use Near Airports

The President's Memorandum to Heads of Departments and Agencies, With the Report of the Science Adviser to the President. March 22, 1967

The President today sent the following memorandum to the heads of all Federal departments and agencies on the subject of aircraft noise and compatible land use in the vicinity of airports. He also released the attached report by his Science Adviser, Dr. Donald Hornig.

MEMORANDUM FOR HEADS OF DEPARTMENTS AND AGENCIES

SUBJECT: Aircraft Noise and Compatible Land Use in the Vicinity of Airports

Air traffic in the vicinity of airports has increased enormously in recent years and the expansion of air commerce and air travel promises to continue. One of the results is that persons and property in the vicinity of airports are being exposed to an increasing amount of aircraft noise. At the same time, our growing economy and population create pressures for increasingly intensive land use near transportation facilities, including airports.

It is imperative to the growth of aviation and to the welfare of our people that means be found to contain such noise within levels compatible with the pursuit of other desirable activities and the quiet enjoyment of property. We must do all in our power to assure that the environment in which we live is not overburdened with any form of pollutant, including excessive noise.

Various agencies of the Federal Government either have programs which affect land use near airports or participate in various ways in actions affecting such land. They must all be deeply concerned with seeking solutions to the problems of noise and compatible land use around airports. To obtain the maximum benefit from knowledge and technology developed within the Federal Government, each Federal Agency or Department should coordinate its efforts and cooperate fully with the particular Departments most concerned, which are the Department of Transportation in matters relating to the prevention, control and abatement of aircraft noise, and the Department of Housing and Urban Development in matters relating to the compatible use of land in the vicinity of airports.

Continued next page--

The Heads of the Departments, Agencies and Establishments of the Executive Branch of Government are therefore directed, consistent with the performance of their mission and the relevant legislation, to take into explicit and due account aircraft noise whenever it is relevant to any of their programs or to action in which they may participate, and to cooperate with the Secretaries of the Department of Transportation and the Department of Housing and Urban Development in efforts to control and reduce the problems of aircraft noise.

Report to the President from Dr. Donald Hornig

Your Transportation Message of March 2, 1966, directed me to work with the Administrators of the Federal Aviation Agency (FAA) and the National Aeronautics and Space Administration (NASA), and the Secretaries of the Department of Commerce (DOC) and of the Department of Housing and Urban Development (HUD), to frame an action program aimed at alleviating the problems of aircraft noise in the vicinity of our Nation's airports. I am pleased to report that a comprehensive program was agreed to on April 29, 1966, and that the participating agencies are working actively to implement its several objectives.

Briefly, the program seeks first to identify, from the viewpoints of technology, economic efficiency and public policy, the combination of noise alleviation actions which must be undertaken to improve the environment in the vicinity of airports significantly; and second, to develop practical ways and means for accomplishing such actions.

Our current efforts are being devoted primarily to finding out how noise can be reduced through (1) engine and airframe design, (2) flight operating procedures and techniques, and (3) land use in the vicinity of airports which is compatible with aircraft operations. The product of this work will include an analysis of the costs and benefits associated with each technically feasible reduction so that we can decide which combination of reductions will be best. In addition, the broad economic and policy implications to both government and industry of such actions as our research suggests are being studied.

Any substantial and lasting improvement to the noise environment of airports will require, first of all, that the noise generated by aircraft be reduced. To this end, the FAA has introduced legislation on behalf of the Administration which, if enacted, will empower the Secretary of the Department of Transportation to certify new aircraft on the basis of noise as well as safety standards.

The FAA and NASA are developing takeoff and landing procedures and techniques which will reduce the noise levels in adjacent communities.

The impact on communities of aircraft noise which cannot be dispelled by quieting the aircraft or by flight procedures and techniques must be minimized through proper land use near airports. HUD and FAA are studying this aspect of the problem with a view to utilizing existing land use programs and developing new programs which, among other things, result in the conversion of residential properties adjacent to airports to more compatible uses (such as their conversion to industrial parks, etc.); and, with the cooperation of state and local government, prevent residential areas from encroaching on the airport environment.

In one year the program has achieved an industry and government-wide consensus as to two of the basic approaches that must be followed if there is to be long-run success in the area of aircraft noise abatement. Of these perhaps the most important is that we now have, for the first time, a generally accepted method of assessing human reaction to aircraft noise. Secondly, it is now agreed that the certification of aircraft must be based on noise criteria as well as considerations of safety.

Many Federal Agencies, through a great variety of programs, participate directly or indirectly in decisions regarding the use of land near airports. For this reason it appears desirable to insure that the Heads of all Federal Departments and Agencies give due weight to aircraft noise considerations in their programs and actions.

Although little immediate relief is foreseeable from the disturbance of aircraft noise, existing research and development programs hold promise of noise reduction in aircraft and engines. The effects of noise which cannot be eliminated from the aircraft can be minimized by appropriate use of land in the vicinity of airports. While obvious results will not come about quickly, long-term improvement should be realized if all the participating agencies continue their efforts along all of the lines we have suggested.

APPENDIX G

1972 IANAP Membership List

APPENDIX G

1972 IANAP MEMBERSHIP LIST

INTERAGENCY AIRCRAFT NOISE ABATEMENT PROGRAM

COORDINATION COMMITTEE MEMBERS AND PANEL CHAIRMAN

Civil Aeronautics Board

R. J. Sherer, Civil Aeronautics Board, 1825 Connecticut Ave. N.W., Washington, D.C. 20428, 382-7781 (Code 128). Alternate: J. C. Constakis, Civil Aeronautics Board B-69, 1825 Connecticut Ave. N.W., Washington, D.C. 20428, 382-3763 (Code 128).

Department of Defense

Dr. H. E. von Gierke (*Chairman, Human Response Panel*), Biodynamics & Bionics Division, Bio-Physics Lab. AFSC, Wright-Patterson AFB, Ohio 45433., 513-256-3602.

Mr. Raymond M. Standahar, Defense Research and Engineering, Office of the Secretary, Department of Defense, Washington, D.C. 20301.

Col. Herb Bell, Office of the Assistant Secretary of Defense (Health & Environment; 3D171, Department of Defense, Washington, D.C. 20301.

Department of Commerce

Mr. N. A. Lieurance, National Oceanic and Atmospheric Admin. (OP-6), 800 Independence Ave. S.W., Rm. 904B, Washington, D.C. 20590, 426-3223. Alternate: Mr. Thomas C. Council, NOAA—OP, 800 Independence Ave. S.W. Rm. 904A, Washington, D.C. 20590.

Department of the Interior

Dr. Theordore Sudia (Chairman*), National Park Service (Rm. 1211), U.S. Dept. of the Interior, Washington, D.C. 20240, 343-2138. Alternate: Mr. Martin Prochnik, Office of the Science Advisor, Department of the Interior, Washington, D.C. 20240, 343-4186. (Mr. Frank Carlson).

Department of Transportation

Mr. Charles R. Foster (Chairman, Coordination Committee), Director, Office of Noise Abatement, Department of Transportation, Washington, D.C. 20590, 426-4553.

Mr. Richard P. Skully, Director, Office of Environmental Quality EQ-1, Federal Aviation Administration, Washington, D.C. 20590, 426-8587. Alternate: Mr. Ron Shreve (Chairman, Operations, Environmental Quality EQ-1, Federal Aviation Admin., Washington, D.C. 20590.

Mr. Eugene Lehr, Chief, Environmental Research Div. TEU-20, Office of Environment and Urban Systems, Department of Transportation, Washington, D.C. 20590, 426-0163.

Mr. Jos. Canny, Acting Chief, Environmental Program Div. TEU-14, Office of Environment and Urban Systems, Washington, D.C., 426-4388.

Dr. Ira J. Hirsh (Consultant to the DOT Office of Noise Abatement), Box 1094, Washington University, St. Louis, 63130, 314-863-0100 Ext. 4235.

Cdr Leon D. Santman (Chairman, Legislative Legal Panel), Assistant General Counsel for Regulation, Department of Transportation, Washington, D.C. 20590, 426-4723.

Department of Housing and Urban Development

Mr. George Winzer (Chairman, Structures Panel), Chief, Urban Noise Abatement, Research Program, Rm. 4212, Department of Housing and Urban Development, Washington, D.C. 20410, 755-5597.

Mr. Richard H. Broun (*Chairman, Land Use/Airports Panel*), Acting Director, Environmental Planning Division (Rm. 7238), Department of Housing and Urban Dev., Washington, D.C. 20410. Alternate: James F. Miller, Chief, Transportation, Environment & Urban Design Branch, Department of Housing and Urban Development, Washington, D.C. 20410, 755-6186.

Department of Health, Education, and Welfare

Dr. Ernest S. Tierkel, Director of the Office of Science, Department of Health, Education, and Welfare, 330 Independence Ave. S.W., Rm. 5606, Washington, D.C. 20201, 963-0430 (13-20430).

---

*Chairman, Natural Environment Panel.

National Academy of Sciences

Mr. John P. Taylor, National Academy of Sciences, 2101 Constitution Ave. N.W., Washington, D.C. 20418, 961-1291 (1224-291).

National Aeronautics and Space Administration

Mr. A. J. Evans, Office of the Administrator National Aeronautics and Space Admin., Washington, D.C. 20546, 962–0176 (13–20176).

Dr. Leon Fox, NASA Headquarters Rm., 600 Independence Ave. S.W., Washington, D.C. 20546, 962-0033. Alternate: Mr. Allan Merkin, NASA Headquarters, Room 626, 600 Independence Ave. S.W., Washington, D.C., 962–0311 13–20311.

Mr. James J. Kramer, (*Chairman, Noise Research Panel*), Chief, Noise and Pollution Reduction Branch, Aeronautical Propulsion Division, Office of Advanced Research and Technology, National Aeronautics and Space Admin., Washington, D.C. 20546.

Dr. T. L. K. Smull (Chairman, Sonic Boom Panel), Office of the Administrator, National Aeronautics and Space Admin., Washington, D.C. 20546.

Mr. Harry W. Johnson, Aeronautical Propulsion Div., Office of Advanced Research and Tech., National Aeronautics and Space Admin., Washington, D.C. 20546.

Dr. Russell Drew, Office of Science and Technology, Executive Office of the President, Executive Office Bldg., Rm. 285, Washington, D.C. 20506.

Dr. Davies—CEQ.

Dr. Alvin Meyers—EPA.

Mr. Woodall –FAA, RD–800.

COORDINATION COMMITTEE ADVISORS

Capt. R. N. Rockwell, Air Line Pilots Assn., 5638 Fremont Ave. South, Minneapolis, Minn. 55419. A carbon copy of all material should be sent to: Mr. Harold F. Marthinsen, Air Line Pilots Assn., 1329 E. Street N.W., Washington, D.C. 20004, 347–2211.

Mr. John J. Gunther, Executive Director, Conference of Mayors of the U.S. 1707 H Street N.W., Washington, D.C. 20006, 298–7535.

Mr. Russell Hoyt, Executive Director, American Assn. of Airport Executives, 2029 K. Street N.W., Washington, D.C. 20006.

Mr. Victor J. Kayne, Vice President, Policy and Technical Planning, Aircraft Owners and Pilots Assn., Washington, D.C. 20014.

Mr. F. W. Kolk, Vice President Engineering Development, American Airlines, 633 Third Avenue, New York, N.Y. 10017, 212–867–1234

Mr. Joseph C. Snodgrass, Director, Transport Aircraft Council Aerospace Industries Assn. of America, Inc., 1725 De Sales Street N.W., Washington, D.C. 20036.

Mr. John O. Woods, National Association of State Aviation Officals (Suite 1002), 1000 Vermont Ave. N.W., Washington, D.C. 20005, St 3–0588.

Mr. Donald J. Reilly, Airport Operators Council International 1700 K Street N.W., Washington, D.C. 20012, 296–3270. Alternate: Mr. Jack E. Koepke, Airport Operators Council Internt'l., 1700 K Street, Washington, D.C. 20012.

General Clifton F. von Kann, Vice President, Operations and Engineering, Air Transport Assn., 1000 Connecticut Ave. N.W., Washington, D.C. 20036 296–5800 X311. Alternate: Mr. William B. Becker, Air Transport Association, 1000 Connecticut Ave. N.W., Washington, D.C. 20036, 296–5800.

Mr. Robert B. Ward, Executive Director, National Business Aircraft Assn., Inc., 401 Pennsylvania Bldg., 425 13th Street N.W., Washington, D.C 20004, 783–9000 Alternate: Mr. Lawrence P. Bedore, National Business Aircraft Assn., Inc., 401 Pennsylvania Bldg., 425 13th Street N.W., Washington, D.C 20004, 783–9000.

INTERAGENCY AIRCRAFT NOISE ABATEMENT PROGRAM

HUMAN RESPONSE PANEL

Members (M) and Advisors (A)

Chairman: Dr. H. E. von Gierke, 6570 AMRL/BB, Wright-Patterson Air Force Base, Ohio 45433, 513-255–3602.

(A) Professor Raymond A. Bauer, Graduate School of Business Administration, Harvard University, Morgan 327, Soldiers Field, Boston, Mass. 02163, 617-491-3174.

(M) Dr. Alexander Cohen, Dept of Health, Education, and Welfare, Occupational Health Research Facility, Public Health Service, 1014 Broadway, Cincinnati, Ohio 45202, 513-684-2680.

(A) Dr. John K. Cullen, Medical Director, Pan American World Airways, Inc., International Airport, Jamaica, N.Y. 11430.

(A) Dr. Hallowell Davis, Central Institute for the Deaf, 818 S. Euclid Avenue, St. Louis, Mo. 63110, 314-652-3200.

(A) Dr. Ira J. Hirsh, Box 1094, Washington University, St. Louis, Mo. 63130, 314-863-0100, ext. 4235.

(M) Mr. Phillip M. Edge, Acoustics Branch, NASA Langley Research Center, Langley Station, Hampton, Va. 23365, 703-722-7961, ext. 3691.

(A) Dr. William Galloway, Bolt Bernaek and Newman, Inc., 21120 Vanowen St., Canoga Park, ca 91303, 213-347-8360.

(A) Dr. Karl D. Kryter, Sensory Science Research Center, Stanford Research Institute, 333 Ravenswood Rd., Menlo Park, CA 94025, 415-326-6200, ext. 4314

(M) Mr. A. Merkin, NASA Headquarters, Code RBM, 400 Maryland Ave SW., Washington, DC 20546, 202-962-0019.

(A) Professor William D. Neff, Department of Psychology, Indiana University, Bloomington, Ind. 47405, 812-337-6063.

(A) Mr. Alberg H. Odell, Aeronautical Planning Section, Port of New York Authority, 111 Eighth Ave., New York, N.Y. 10011, 212-620-7750.

(M) Mr. Raymond A. Shepanek, Program Manager, Sonic Boom, EQ-30, Federal Aviation Administration, 800 Independence Ave SW., Washington DC 20590, 202-426-8587.

(M) Mr. William C. Sperry, Chief, Aircraft Noise Branch, RD-800, Federal Aviation Administration, 800 Independence Ave SW., Washington, DC 20590, 202-962-8234.

(A) Dr. Milton A. Whitcomb, National Academy of Sciences, 2101 Constitution Ave NW., Washington, DC 20418, 202-961-1505.

(M) Mr. J. F. Woodall, Chief, Noise Abatement Division, RD-800, Federal Aviation Administration, 800 Independence Ave SW., Washington, DC 20590.

Dr. Stanley R. Mohler, Chief, Aeromedical Applications Div., Office of Aviation Medicine, Federal Aviation Administration, 800 Independence Ave SW., Washington, DC 20590, 202-962-5433.

Mr. Robert L. Paullin, Chief, Regulatory Policy and Standards Division, TST-50, Department of Transportation, 800 Independence Ave SW., Washington, DC 20590, 202-426-4553.

COORDINATION COMMITTEE OF THE INTERAGENCY AIRCRAFT NOISE ABATEMENT PROGRAM

MEMBERSHIP—LAND USE/AIRPORTS PANEL

U.S. Government Members

Chairman.—Richard H. Broun, Director, Environmental Planning Division, HUD (138-56185).

Robert F. Bacon, Chief, Systems Planning Division, Airport Service, FAA/DOT (13-28801).

Lt. Col. Noland S. Hughes, Headquarters, USAF, AFOCE-KB Bolling Air Force Base.

Benson L. Dutton, Chief, Operations Analysis Branch, Division of Construction Support, Office of Education, HEW (13-28121).

Robert L. Paullin, Associate Director for Regulatory Policy and Standards, Office of Noise Abatement, DOT (13-25531).

Advisors

Robert Einsweiler, Planning Director, Metropolitan Council, 101 Capitol Square Building, St. Paul, Minn. 55101 (612) 227-9421.

James L. Galloway, City Manager, City of Park Ridge, Park Ridge, Ill. 60068 (312) 823-1161.

Colonel A. B. McMullen, Exec. V. Pres., National Association of State Aviation Officials, 100 Vermont Avenue N.W., Washington, D.C. 20005 (202) 783-0588.

Cari D. Hart, Director, Special Financial Projects, Air Transport Association of America, 1000 Connecticut Avenue, N.W., Washington, D.C. 20036 (202) 296-5800.

Lyman M. Tondel, Jr., Cleary, Gottlieb, Steen & Hamilton, 52 Wall Street, New York, N.Y. 10005 (212) 344-0600.

J. Donald Reilly, Director, Legal Services, Airport Operators Council, International, Inc., 1700 K Street N.W., Washington, D.C. 20006 (202) 296-3270.

Lloyd Hinton, Executive Director, Metro. Aircraft Sound Abatement Council, 6301 34th Avenue South, Minneapolis, Minn., 55650 (612) 726-0411.

James Strunck, Asst. Corp. Counsel, City of Chicago, Room 611, City Hall, Chicago, Ill. 60601 (312) 744-6928.

John L. Taylor, City Manager, 29th Floor, City Hall, Kansas City, Mo. 64106 (816) CR 4-2474.

Captain Clifford Bragdon, Edgewood Arsenal, Edgewood, Md. 21010.

Interagency Aircraft Noise Abatement Program

LEGISLATIVE/LEGAL PANEL

Members

Cdr. Leo Santman, Asst. General Counsel for Regulation, Department of Transportation, Washington, D.C. 20590, (202-963-6025).

Mr. Charles J. Peters, Associate General Counsel Litigation Division, FAA, Washington, D.C. 20590 (202-962-5301).

Mr. Grant C. Reynolds, Deputy Assistant General Counsel (Installations), Department of the Air Force, Washington, D.C. 20301.

Major William F. McCormack, Claims Division, Office of the Judge Advocate General, Department of the Air Force, Washington, D.C. 20301.

Mr. John Kruse, Civil Division, U.S. Department of Justice, Washington, D.C. 20530.

Advisers

Mr. Lyman M. Tondel, Jr., Cleary, Gottlieb, Steen, & Hamilton, 52 Wall Street, New York, N.Y. 10005.

Mr. Morton H. Wilner, Wilner, Scheiner & Greeley, Landmark Building, 1343 H Street NW., Washington, D.C. 20005.

Mr. Sidney Goldstein, General Counsel, The Port of New York Authority, 111 Eighth Avenue at 15th Street, New York, N.Y. 10011.

Other Participants

Mr. Carl J. Green, Office of Operations and Legal Counsel, Department of Transportation, Washington, D.C. 20590.

Mr. Howard Walderman, Department of Health, Education, and Welfare, 1126 South Bldg., 4th & Independence Ave. SW., Washington, D.C. 20201.

Mr. Robert L. Paullin, Associate Director for Regulatory Policy and Standards, Office of Noise Abatement, Department of Transportation, Washington, D.C. 20690.

NATURAL ENVIRONMENT PANEL

Dr. Theodore Sudia, Chairman, National Park Service (Rm. 1211), U.S. Dept. of the Interior, Washington, D.C. 20240.

Mr. Martin Prochnik, Deputy, Science Advisor, Department of the Interior, Washington, D.C. 20240.

Mr. R. A. Shepanek, Federal Aviation Admin., Department of Transportation, Washington, D.C. 20590.

Mr. Robert H. Rose, Division of Resources Management and Visitor Protection, National Park Service, Washington, D.C. 20240.

Dr. James Bond, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md. 20705.

Dr. Paul Sund, Bureau of Commerical Fisheries, Department of the Interior, Washington, D.C. 20240.

Dr. John Buckley, Office of Science and Technology, Executive Offices of the President, Washington, D.C. 20506.

Dr. A. F. Espinosa, ESSA—Coast and Geodetic Survey, 6001 Executive Blvd. Tovkbillr, Md. 20852.

Mr. Charles H. Williams, Chief, Plans and Programs Div., Office of Noise Abatement, Department of Transportation, Washington, D.C. 20590.

INTERAGENCY AIRCRAFT NOISE ABATEMENT PROGRAM

NOISE RESEARCH PANEL

Mr. James Kramer, Chairman, Chief, Noise and Pollution Reduction Branch, Aeronautical Propulsion Div., NASA Headquarters, Washington, D.C. 20546.

Mr. Carl Bristol, Project Engineer, Noise Reduction, Engineering 2-B, Pratt & Whitney Aircraft Division, United Aircraft Corporation, 400 Main Street, East Hartford, Conn. 06108, 203–565–4321 ext. 7165.

Mr. W. Harry Close, Assoc. Dir. for Environmental Research, Office of Noise Abatement (TRT–50), Department of Transportation, 800 Independence Avenue S.W., Washington, D.C. 20590, 202–962–5531.

Mr. Leo A. Corrigan, Allison Division, General Motors Corporation, P.O. Box 894, Indianapolis, Ind. 46206, 317–243–4622.

Mr. Harry Drell, Department 7401, Lockheed-California, P.O. Box 551, Burbank, Calif. 91503, 213–847–5542.

Mr. I. J. Gershon, Propulsion Branch, Turbine Engine Division, Wright-Patterson, Air Force Base, Ohio 45433, 513–255–2767.

Mr. Harvey H. Hubbard, Chief, Acoustics Branch—239, NASA Langley Research Center, Langley Station, Hampton, Va. 23365, 703–722–7961 ext. 3691.

Mr. Victor Millman, Project Engineer, ROHR Corporation, P.O. Box 878, Chula Vista, Calif. 92012, 714–422–7111 ext. 1915.

Dr. W. R. Morgan, Manager, Quiet Engine Program, Bldg. 501, J174, General Electric Company, Evendale, Ohio 45215.

Mr. A. L. McPike, Chief, Acoustics Branch C–1–253, Structural Mechanics Section (35–42), Douglas Aircraft Division, 3855 Lakewood Boulevard, Long Beach, Calif. 90801, 213–593–3461.

Mr. Thomas J. O'Brien, Technical Support Staff No. 10, Office of Abatement, Department of Transportation, 800 Independence Avenue S.W., Washington, D.C. 20590, 202–962–8234.

Dr. John O. Powers, Chief, Technical Support Staff No. 10, Office of Noise Abatement, Department of Transportation, 800 Independence Avenue S.W., Washington, D.C. 20590, 202–962–8234.

Mr. R. E. Russell, Chief, Aircraft Noise Unit, Org. 6–8570, Mail Stop 29–05, Commercial Airplane Division, The Boeing Company, Box 707, Renton, Wash. 98055, 206–654–5588.

Mr. G. P. Sallee, Development Engineer, Powerplant and Noise Technology, American Airlines, 633 Third Avenue, New York, N.Y. 10017, 212–867–1234.

Mr. Newell D. Sanders, Director, Chemistry and Energy Conversion, NASA Lewis Research Center, 21000 Brookpark Road, Cleveland, Ohio 44135, 216–433–6432.

Mr. Ira Schwartz, Research Division, NASA Headquarters, 600 Independence Ave. S.W., Washington, D.C. 20546, 202–962–0171.

Mr. John Schettino, Propulsion Branch, Supersonic Transport Development, Federal Aviation Administration, Department of Transportation, 800 Independ- Washington, D.C. 20590, 202–962–8234.

Mr. William C. Sperry, Technical Support Staff No. 10, Office of Noise Abatement, Department of Transportation, 800 Independence Avenue S.W., Washington, D.C. 20590, 202–962–8234.

Mr. Stafford W. Wilbur, Executive Secretary, Propulsion Branch, RAP, Aeronautical Vehicles Division, NASA Headquarters, Washington, D.C. 20546, 202–962–0183.

OPERATIONS PANEL

Mr. M. E. Russell, Flight Standards Service, Federal Aviation Aministration, 800 Independence Avenue SW., Washington, D.C. 20591, 426–8452.

Mr. F. C. Sanchez, Air Traffic Service, Federal Aviation Administration, 800 Independence Avenue SW., Washington, D.C. 20591, 426–8532.

Mr. Joseph W. Howell, Office of Supersonic Transport, Federal Aviation Administration, 800 Independence Avenue SW., Washington, D.C. 20591, 426–8485.

Mr. James F. Woodall, Systems Research and Development, Federal Aviation Administration, 800 Independence Avenue SW., Washington, D.C. 20591, 426–8446.

Mr. Bedore, Airports Service, National Business Aircraft Association, 401 Pennsylvania Building, Washington, D.C. 20004, 783-9000.

Mr. J. P. Loomis, Associate Chief, Aerospace Mechanics Research Division, Batelle Memorial Institute, Columbus Laboratories, 505 King Avenue, Columbus, Ohio 43201, 614-299-3657.

Mr. George Cherry, Deputy Association Administrator—Programs, National Aeronautics and Space Admin., 400 Maryland Avenue SW., Washington, D.C.

Mr. L. J. Sullivan, Chief Engineer Test Pilot, Lockheed-Georgia Company, Lockheed Aircraft Corporation, Marietta, Ga. 30060, 404-424-5012.

Mr. William B. Becker, Assistant V.P., Operations, Air Transport Association, 1000 Connecticut Avenue NW., Washington, D.C. 20036.

Mr. L. Achitoff, Chief, Aviation Technical Service, The Port of New York Authority, 111 Eighth Avenue at 15th Street, New York, N.Y. 10011, 212-620-7503.

Mr. Richard Judy, Director, Dade County Port Authority, Miami International Airport, Miami, Fla. 33130.

Mr. Donald B. Franke, Exec. Director, Air Traffic Control Association, Suite 409, ARBA Building, 525 School Street SW., Washington, D.C., 347-5100.

Mr. Charles H. Williams, Chief, Plans and Programs Division, Office of Noise Abatement, Department of Transportation, Washington, D.C. 20591, 426-4558.

Mr. Harold Marthensin, Engineering and Air Safety, Air Line Pilots Association, 1143 National Press Building, Washington, D.C. 20004.

Mr. R. P. Skully (Chairman), Office of Environmental Quality, Federal Aviation Administration, 800 Independence Avenue SW., Washington, D.C. 20591 426-8406.

Interagency Aircraft Noise Abatement Program

SONIC BOOM RESEARCH PANEL

Dr. T. L. K. Smull, Office of the Administrator, NASA Headquarters, Washington, D.C. 20546, (202-962-0201).

Dr. James K. Angell, Chief, Atmospheric Trajectory Research Laboratory, 619 Gramax Building, 8060 13th Street, Silver Spring, Md. 20910 (301-495-2283).

Mr. Harry W. Carlson, FSRD—Supersonic Mechanics Section, NASA Langley Research Center, Langley Station, Hampton Va. 23365 (703-722-7961 ext. 3260).

Dr. Wallace D. Hayes, Department of Aeronautical and Mechanical Sciences, Forrestal Research Center, Princeton University, Princeton, N.J. 08540 (609-452-5108).

Mr. Clarence S. Howell, Chief, Aerodynamics Staff, Supersonic Transport Program, The Boeing Company, P.O. Box 3733, Seattle, Wash. 98124 (206-655-6477).

Mr. Lynn W. Hunton, Vehicle Aerodynamics, NASA Ames Research Center, Moffett Field, Calif. 94035 (415-961-2252).

Mr. Norman McLeod, Acoustic Section, Loads Subdivision, NASA Flight Research Center, P.O. Box 273, Edwards, Calif. 93523 (805-258-3311 ext 455).

Mr. Kenneth J. Power, The Special Projects Div., Federal Aviation Administration, Washington, D.C. 20590 (202-962-4195).

Mr. Ira R. Schwartz, Fluid Dynamics, RRF, NASA Headquarters, Washington, D.C. 20546 (202-962-0171).

Dr. Richard Seebass, Associate Professor, Graduate School of Aerospace Engineering, Cornell University, Ithica, N.Y. 14850 (607-275-3600).

Mr. Jim R. Thompsom, Department 74-30, Building 63, Lockheed California Company, P.O. Box 551, Burbank, Calif. 91503 (213-847-5685).

Mr. Eugene F. Wyszpolski, Executive Secretary, Aerodynamics Branch, RAA, Aeronautical Vehicles Division, Washington, D.C. 20546 (202-962-0201).

Mr. William G. Osmun, Manager, Technical Information Services, Air Transport Association, 1000 Connecticut Avenue NW., Washington, D.C. 20036 (202-296-6800).

Demetrius Zonars, Acting Chief Scientist, Department of the Air Force, Air Force Flight Dynamics Laboratory (AFSC), Wright-Patterson Air Force Base, Ohio 45433.

Mr. W. Harry Close, Associate Director for Environmental Research, Office of Noise Abatement, Department of Transportation, Washington, D.C. 20590.

INTERAGENCY AIRCRAFT NOISE ABATEMENT PROGRAM

STRUCTURES PANEL

Mr. George Winzer, Chairman, Federal Housing Administration, Dept. of Housing and Urban Deve., Washington, D.C. 20410.

Mr. Wm. C. Sperry, Office of Noise Abatement, Federal Aviation Administration, Washington, D.C. 20590.

Mr. Sigmund Gerber, Director, Office of the Deputy Asst. Secretary of Defense for Family Housing, Department of Defense, Washington, D.C. 20301.

Mr. Walter E. Mylecraine, Asst. Commissioner for Construction Services, Dept. of Health, Education and Welfare, Washington, D.C. 20201.

Mr. Wm. H. Mayes, Head, Acoustic Dynamics Section, National Aeronautics and Space Admin., Langley Field, Va. 20346.

Mr. Neil A. Connor, Consulting Architect, Office of Technical Standards, Federal Housing Administration, Department of Housing and Urban Development, Washington, D.C. 20410.

Mr. Richard J. Canavan,* Staff Vice President, Builders Services Division, National Assn. of Home Builders, 1625 L Street, NW., Washington, D.C. 20036.

Mr. James H. Cypher,* Technical Representative for Contract Research Development, PPG Industries, Pittsburgh, Pa. 15222.

Dr. John Robertson,* Director of Technical Services, U.S. Gypsum Company, Arlington, Va. 22203.

Mr. J. Donald Reilly,* Director of Legal Services, Airport Operators Council International, 1700 K Street NW., Washington, D.C. 20006.

Colonel John P. Taylor, USAF (Ret.), Executive Secretary, National Academy of Sciences, 2101 Constitution Ave. NW., Washington, D.C. 20418.

Mr. Robert L. Paullin, Associate Director for Regulatory Policy and Standards, Office of Noise Abatement, Department of Transportation, Washington, D.C. 20590.

SOURCE: U. S. House. Subcommittee on Aeronautics and Space Technology of Committee on Science and Astronautics. Hearings of January 18, 19, and 20, 1972 on "Aeronautical Research and Development," pp 215-226

APPENDIX H

Conclusions of the Doolittle Report

APPENDIX H

CONCLUSIONS OF THE DOOLITTLE REPORT

The Airport and Its Neighbors

Part I

Section 1. Summary

The task of the President's Airport Commission has been to consider means to safeguard the lives of people living in the vicinity of airports and to alleviate for them, as far as possible, the disturbance that arises from the operation of aircraft. As directed by the President, the Commission has studied these problems in the light of an urgent need for continued development of both civil and military aeronautics for the welfare and safety of this country.

Establishment of the Commission was an outgrowth of a sequence of tragic accidents in the New York-Northeastern New Jersey metropolitan area. The fact that these mishaps were confined, by coincidence, to a single community accentuated fears of many Americans that aircraft represent a serious hazard to ground-dwellers. They also served to increase awareness of nuisance aspects in the use of airports, particularly with regard to noise. As the result of a careful and detailed study of both hazard and nuisance factors, the Commission feels that a great deal is being done to protect the people; it also feels that more could and should be done.

Along with every other vehicle invented and used by modern man, aircraft suffer occasional accidents with resulting fatalities to their occupants. More rarely, people and property on the ground are also involved. Incidents of this sort are most likely to occur near airports because operations are somewhat more

Source: President's Airport Commission, The Airport and its Neighbors, Washington: U.S.G.P.O., 1952, pp. 3-21.

hazardous at terminals than en route. Current improvements in equipment and in operational procedures, however, offer the possibility that accidents of all kinds will be further reduced. Accidents involving aircraft on airways and at air terminals should eventually fall well below rates now considered normal for other forms of commercial transportation.

The same favorable trend cannot be forecast as confidently for the nuisance factors. Exhaust mufflers and slow-turning multi-blade propellers of large diameter have been applied successfully to quiet small airplanes. As aircraft become larger and faster, the power required to propel them and the resultant noise multiplies many fold. Some noise reduction can be achieved, even in these large aircraft, by reduced propeller tip speed and by removing more energy from exhaust gasses, but reducing their noise to comfortable proportions still presents a difficult problem.

In the future, with wider use of high speed turbine-driven propellers or high thrust jet-propulsion, there will be a tendency for the volume of noise to increase beyond levels now experienced and for the character of the noise to become more objectionable. Research is now under way in these areas, but the problems are technically difficult and no effective solutions are in sight.

Airport Growth

The growth of air transportation has put a severe strain on many major airports. Original facilities for handling airplanes in the air and on the ground and for taking care of passengers, mail, express and freight in terminal buildings have been outgrown. Many airports are approaching saturation. Some of them are badly out of balance due to a deficiency in one or another of their facilities. For example, some of our large municipal airports now have traffic control capabilities permitting a great many landings and take-offs per hour but their runways or their servicing facilities on the ground have not kept pace. In some cases runways which were once adequate in strength will not now support today's heaviest airplanes. Larger and faster airplanes making more landings and take-offs in worse weather will call for more adequate runways, larger clear approach areas and improved traffic control facilities and procedures.

Definite traffic patterns have been established by the Civil Aeronautics Administration at every major terminal airport in the country. These flight tracks have been designated after careful consideration of all flight safety factors. Serious efforts are being made to reduce ground hazard and noise. Eventually airports and their runways should be planned so that all approach and holding patterns minimize flights over thickly settled areas.

Tighter control of aircraft near airports must be achieved. To accomplish this, necessary equipment must be developed, procured and installed. Once adequate facilities are operational, positive traffic control at congested airports should be insisted upon at all times, even under what are now considered Visual Flight Rule conditions. The ceiling and visibility limits for VFR flights in congested terminal areas and the minimum ceilings and visibilities under which aircraft are permitted to circle and maneuver after instrument approach should be raised.

Airport use becomes more complicated when there is joint use by civil aviation and the armed services. In the interest of economy it is common practice for air defense, military air transport or air reserve training units to be based on municipal airports. Combat airplanes are generally noisy and will probably become noisier with the advent of more powerful jet types. Because of the noise of military operations (especially on week ends) and because accidents have occurred, people living near such airports have complained. Joint military and civil use of major airports is undesirable. Separation should be effected whenever it is economically feasible. Military training operations over thickly settled regions should be prohibited.

In some cases, manufacturing plants are located on busy civil airports and both experimental and production aircraft are being flown from these airports. Recognizing the potential hazard involved, especially with the very fast jet types, some manufacturers have established test facilities on remote airports, and are making trial and shakedown flights away from congested areas. Whenever practicable this should be required. Flight delivery of production aircraft may be permitted under proper procedures and under conditions where nuisance and hazard to the surrounding community are reduced to the minimum.

Community Encroachment

Another aspect of the problem deals with the technical and economic forces which are pressing for airport expansion and which, in turn, are opposed by the encroachment of the surrounding community. Many communities are approaching an impasse arising from limitations to safe operation on existing airports combined with a physical inability to improve or extend them because homes or factories have been built close to the runway ends.

The pattern of development for major airports has been historically similar. Twenty years ago when airplanes were small in size and few in number, airport sites were selected at a distance beyond the city limits where ground was cheap and where few buildings obstructed the natural approaches to the field. Few then complained of the noise because it was infrequent and not very loud. As a matter of fact, this audible evidence of the arrival and departure of mail and passenger airplanes was often a source of local pride.

Normal growth, greatly augmented by the wartime movement of people to the cities, caused a spreading out toward the airport. Furthermore, the airport and its activities frequently acted as a magnet, drawing first the sightseer and then the businessman interested in concessions. Because desirable land was cheap, and a new and advantageous type of transportation was available, industries (sometimes aeronautical, sometimes not) settled near the airport.

Reproduced from best available copy.

LOS ANGELES—1939

LOS ANGELES—1949

Attached to all of these enterprises were people. People required homes within a short distance of their jobs. Speculators saw the opportunity to subdivide cheap land at a profit. Public utilities established primarily for the airport could be made available to the adjacent housing. Villages emerged, complete with shopping centers, schools, hospitals and recreation facilities. As a consequence, many municipal airports which were started less than two decades ago in the open country were progressively surrounded by residential and industrial areas.

The immediate problem is to find a way to protect present airports and the people residing near them by applying some means of control of ground use in approach zones. Local authorities should prevent further use of land for public and residential buildings near the ends of existing runways. If this is not done, new contingents of home owners will be added to the ranks of those who are now protesting against noise and hazard. In time public pressure may threaten the continued existence of the airport and large investments of public and private funds will be jeopardized.

Zoning

This Commission has two suggestions to make in this connection: (1) that certain extensions or over-run areas be incorporated in the airport itself, and (2) that larger areas beyond such extensions be zoned by proper authority, not only to prevent the erection of obstructions that might be harmful to aircraft, but also to control the erection of public and residential buildings as a protection from nuisance and hazard to people on the ground.

Many airports already maintain cleared areas beyond the ends of paved runways to reduce the danger from accidental over-runs on landings, or from aborted take-offs. The Commission feels that no new airport should be planned without clear and, if possible, level areas at least 1,000 feet wide and at least one-half mile long beyond each end of the dominant runways. These areas should be incorporated within the boundaries of the airport.

Beyond such extensions, the problem of control of the use of the land in approach zones becomes more difficult because of the large area involved. For reasons shown elsewhere in this report, it would be desirable to protect approaches to dominant runways for a distance of at least two miles beyond the runway extensions. Such protective zones should be fan-shaped with a width of at least 6,000 feet at the outer ends.

Outright ownership of sufficient land at each end of the dominant runways would provide the best solution. There is no legal question but that airports engaged in interstate commerce are a public utility for which public funds may be expended. Also, there is no legal question but that States, counties and municipalities may join together to condemn land (where enabling legislation exists) outside the boundary of any one municipality for airport purposes. The cost of acquisition of sufficient land, however, is frequently beyond the capabilities of a single community.

Where it is not economically feasible to purchase such tracts of land so that absolute control of their use could be maintained, reliance must be placed on zoning laws to protect both the aircraft using the airport from obstructions to flight and the people on the ground from hazard and noise.

Although there are legal means to zone approach areas to protect aircraft from collision with obstructions, no zoning laws have been enacted to the knowledge of this Commission to control land use generally in approach zones. Consideration of basic property rights raises the question in both cases as to whether or not such control of use constitutes a "taking" of the property, and as such should be compensable to the owners.

Traditionally the power to control the use of land rests with the States and may be delegated to counties and local communities. The Federal Government should, however, propose model airport protective legislation for enactment by the States, and should help where practicable toward reaching a satisfactory solution of this type of zoning problem.

It is recommended that the responsibility for zoning be left with the States and their political subdivisions, at least for the present, and until they have had a full opportunity to cope with the problem under adequate Federal guidance. It is further suggested that the Federal Government commit no funds for new airport construction unless the State, or other local authority gives reasonable assurance that the air approaches to the airport will be protected in accordance with the recommendations made herein. The land under the approaches should not be put to any use which might later serve as a basis for an effective argument that the space above should not be used by aircraft. Future residents should not be given any grounds for claims that aircraft approaching or departing from the airport, or which may be involved in accidents, create a nuisance which entitles them to an injunction, to recover damages or to demand that the airport be closed.

The suggestions made above apply particularly to new airports to be laid out in areas free from natural and artificial obstructions. Such ideal conditions are to be found in a very few localities desirably adjacent to sources of air traffic. For a long time to come, therefore, most airports must make the best of existing conditions even if they fall short of the ultimate airport specifications recommended here.

To promote the general welfare and to protect necessary systems of air transportation, it is essential that the major airports now engaged in interstate commerce, the postal service, or in defense activities be continued in operation. Furthermore, these airports must not be allowed to deteriorate. They must be continually improved to the greatest possible degree along the lines recommended. They should be made to approach the ideal airport as closely as local conditions permit. Local zoning authorities should employ their powers to prohibit further developments which will interfere with appropriate use of existing airports. Here also availability of Federal funds should be dependent upon such local action.

Federal Assistance

Federal aid for construction at airports was inaugurated in the early 1930's. The Federal Airport Act of 1946 set up a continuing program with an authorized maximum expenditure rate of $100 million per year. In general, the program called for financing airport projects on a "matching" basis, with the Federal Government providing grants-in-aid to the communities concerned. Unfortunately, this program has lagged because of inability to synchronize the availability of Federal and local funds. Such difficulties should be resolved at the earliest possible date. Priority of expenditure of Federal funds should be given to the lengthening of runways and to the acquisition of cleared extensions beyond the runways for incorporation in the airport.

Runway Design

A solution to many aspects of the airport problem is, in the opinion of the Commission, the early acceptance of the single or parallel runway design of airport with approaches over relatively clear areas. By this means, airport development could proceed along economical lines with minimum hazard and annoyance to neighbors. The single or parallel runway airport has one shortcoming—difficulty of operation in strong cross-winds—but this is being overcome through pilot training techniques, the use of tricycle gears and the further development of special cross-wind landing gears.

Too much emphasis has been placed on statistics of prevailing winds, including light and variable airs of little consequence in modern flying practice. As a result large sums still are being programmed unnecessarily for multiple intersecting runway airports, and too little consideration is being given to the hazard zones off the ends of these same runways. Simplified traffic control, economy of navigational aids, more effective use of radar, less airport acreage, room for expansion, protected runway extensions and smaller paved areas are favored by an oblong rather than a square airport. This is a principle that can be applied to new airport design and, in many cases, to present airports which are being hemmed in on some sides by residential areas. However, where high cross-winds are prevalent an additional but shorter runway, oriented at 90° to the dominant runway, will be needed for some years.

Runway Length

Some manufacturers suggest that future transport airplanes (derived from current long-range high speed bombers) could be designed to have a marked gain in performance and efficiency if airports with runways several miles long with clear, flat approaches of several additional miles at each end were available. Such configurations for a few new airport projects might prove economically feasible, but for existing municipal airports such extensions are impractical. There are very few sites available within reasonable distance of population centers where airports with extremely long runways could be built. A well balanced system of civil air transportation, adequate to meet the needs of national defense, air commerce and the postal service calls for a wide-spread network of airports of reasonable size with the future to determine the requirements for a few "super" airports at strategic points for very long-range routes.

Most municipal authorities consulted by this Commission wish to retain their present airports. They urge that current standards of runway length be "frozen" and remain in effect for a substantial period of time in order to protect their already large investment. They argue that airplane designers should apply the results of research and invention to the improvement of the safety, performance and economy of their products within existing runway length limits.

Standard runway lengths for different categories of airports have been proposed. As many airports as possible should bring themselves up to these standards. It seems to this Commission that major air terminals should eventually provide principal runways, for the use of transcontinental or intercontinental airplanes, that are at least 8,400 feet long. A length of 10,000 feet should accommodate all types of practical transport airplanes now forseen. Additional runway length would provide an additional safety factor but should not be required for normal operations.

A future change in the established standards for runway length should come only after compelling considerations. Its effect on the air transport industry would be world-wide. Few principal civil airports could undertake any substantial increase in runway length, and a new system of airports would have to be undertaken.

While runway length standards are desirable, it appears undesirable to specify a long term standard for strength of runway construction, or to attempt to limit airplane designers on airplane weight or wheel loads. Airports should be designed for the greatest wheel loads anticipated, and in the event that runways prove inadequate in strength for future airplanes, they can be reinforced or rebuilt.

Nuisance Factors

Some excuse may be found for failure to have foreseen the rapid rate of aeronautical progress in designing airports in the past, but it is to be regretted that more consideration was not given to the comfort and welfare of people living on the ground in the vicinity of airports. To be sure, many settled near an airport after it was in operation, with little realization of the potential nuisance and hazard. The public cannot be expected, however, to anticipate technical developments and it should be informed and protected by the responsible authorities.

The public deserves a clear explanation of necessary airport procedures, accompanied by valid assurances that everything possible is being done to alleviate both noise and hazard. For example, in low visibility, incoming aircraft sometimes must be "stacked" near an airport under precise traffic control to prevent collisions. The public will understand and accept this necessity if it is assured that, within the limit of safe operation, the holding areas are selected so that the stacks will not be a source of nuisance. Also where operators are making a sincere effort to reduce engine run-up noise by controlled ground procedure and by the provision of proper acoustical treatment, and are avoiding take-offs over inhabited areas, reasonable people can be persuaded to tolerate some noise as a part of the cost of living in this age of technology. Operators, pilots and airport controllers must be indoctrinated to consider the people on the ground and make every effort consistent with safe flying practice to reduce hazard and noise.

Aircraft designers and manufacturers must also assume a share of the noise alleviation task. So far, they have been concerned mainly with noise levels inside the airplane. They should also strive to minimize noise outside the airplane. If the manufacturer is given a penalty for high noise or better yet a premium for low noise level, it will stimulate competition in the development of quieter aircraft.

Standardization and Training

It is believed that through standardization and training, accidents due to pilot error can be reduced. There is, at the moment, a regrettable lack of uniformity of design and arrangement of transport aircraft cockpits. Not only is there variation between different types of aircraft, but also variations in the same type, depending on the ideas of individual airlines. A useful step in improving the training of pilots in emergency procedures would be the standardization and simplification of equipment in cockpits. Simplified emergency procedures naturally would follow. The pilot's job would be easier and safety would be increased.

More training in emergency procedures should be required. Simulated emergency drills, in airplanes without passengers, should be conducted periodically. Such training flights should, of course, be conducted over uninhabited areas. A method of training flight crews without hazard is through the use of flight simulators. These are complicated devices duplicating the cockpit and flight deck of the airplane. The equipment and instrumentation are operated by an instructor to simulate various emergency conditions. The crew then deals with the situation as it would in flight. Necessary practice is thus provided without risk. Since flight simulators are expensive and one is required for each type of aircraft, it may be necessary to purchase and use them on a cooperative basis.

Airport Planning

Alleviation of presently undesirable conditions is not enough. Policies and plans for the future must take into account trends in the air transport system of the nation. This will require continuing study.

It is to be expected that air transportation will continue to develop at a rapid rate. Municipalities should anticipate this expansion. They should plan for it and prepare to finance their share of it. Plans should include improvement of existing airports up to the point of balanced saturation and also the purchase of land required for additional airports some years before saturation is reached. If the latter is not done, the purchase cost will be much greater and the chance of obtaining and protecting a desirable site correspondingly reduced. Insofar as topography, present land use and economics will permit, the airport should be as close as possible to the center of the area from which air traffic originates. Comprehensive forward planning is essential to the establishment of efficient, economical, nuisance-free airports.

Such planning may require changes in the laws that govern the use of the navigable airspace, including the flight path to and from airports. Coordination and standardization in the development of airports used in interstate commerce are necessary. It is possible that the future will call for a system of airports for a metropolitan area with separate facilities for certain types of air traffic. This involves regional and city planning and particularly questions of interconnecting highway and air services and the integration of the air and ground traffic. It also implies successful development of short-haul aircraft, possibly of the helicopter type.

The inadequacy of our present road network, particularly in the vicinity of major cities and between city and airport, is one of the greatest deterrents to the further development of transport aviation.

Navigable Airspace

As a result of fear engendered by low flying aircraft, several communities have recently passed local ordinances prohibiting flight over them at altitudes less than 1,000 feet. Along airways, such regulations would present no problem. They could, however, severely hamper approaches to certain airports. It is anticipated that the courts will shortly be called upon to decide this question.

This Commission believes that the Federal Government, through the Civil Aeronautics Board and the CAA, now has authority from Congress to regulate and determine approaches for airports used in interstate commerce. Accordingly, the CAA should determine what is the best approach pattern for a particular airport, and should then declare that the "safe altitude" in that area is in conformity with the airport approach pattern. Pursuant to the Civil Aeronautics Act of 1938, this should mean that there is a "public right of transit" in accordance with that airport approach pattern. If the pattern appears to depreciate property values of underlying landowners, the Federal Government might, if funds are made available by the Congress, exercise the power of eminent domain to acquire title to the land. If an easement through the airspace is involved, it appears that additional legislation would be required.

Airport Certification

It is clear that commercial airports are instrumentalities of interstate and foreign commerce. As such, they have a definite public character. Their continued efficient operation vitally affects interstate commerce, national defense, and the postal service. They are, however, at the present time subject to little Federal regulation. The Commission believes that such regulation should be kept to a minimum, but also believes that more authority over such airports is required than is now provided by Federal statutes.

The Civil Aeronautics Act authorizes the Administrator to inspect, classify and rate any air navigation facility (which includes airports) as to its suitability, and to issue certificates for any air navigation facility. But the Act does not require the issuance of a federal certificate to airports, nor does it make unlawful the operation of an airport without a certificate.

The Civil Aeronautics Act should be amended to require that certificates shall be issued for the operation of airports used in interstate commerce. Such certificates should define minimum standards for safe operation and proper maintenance and should be revoked if such standards are not met. The abandonment of such certificate or the closing of an airport for other reasons, however, should not be permitted except after notice and hearing and due finding that the proposed action is in the public interest.

Section 2. Recommendations

The Commission feels that definite arrangements should be made and specific governmental agencies designated to develop and to implement the following recommendations:

1. *Support required airport development.* New airports will be needed and present airports must be improved. State, county

and municipal governments should be prepared to assume their proper share of this expense.

2. *Expand Federal-Aid Airport Program.* Authorization of matching funds for Federal aid to airports should be implemented by adequate appropriations. Highest priority in the application of Federal aid should be given to runways and their protective extensions incorporated into the airport, to bring major municipal airports up to standards recommended in this report.

3. *Integrate municipal and airport planning.* Airports should be made a part of community master plans completely integrated with transportation requirements for passenger, express, freight and postal services. Particular attention should be paid to limited access highways and other transportation facilities to reduce time to the airport from sources of air transport business.

4. *Incorporate cleared runway extension areas into airports.* The dominant runways of new airport projects should be protected by cleared extensions at each end *at least* one-half mile in length and 1,000 feet wide. This area should be completely free from housing or any other form of obstruction. Such extensions should be considered an integral part of the airport.

5. *Establish effective zoning laws.* A fan-shaped zone, beyond the half-mile cleared extension described in Recommendation 4, at least two miles long and 6,000 feet wide at its outer limits should be established at new airports by zoning law, air easement or land purchase at each end of dominant runways. In this area, the height of buildings and also the use of the land should be controlled to eliminate the erection of places of public assembly, churches, hospitals, schools, etc., and to restrict residences to the more distant locations within the zone.

6. *Improve existing airports.* Existing airports must continue to serve their communities. However, cities should go as far as is practical toward developing the cleared areas and zoned runway approaches recommended for new airports. No further

building should be permitted on runway extensions and, wherever possible, objectionable structures should be removed. Operating procedures should be modified in line with Commission recommendations for minimizing hazard and nuisance to persons living in the vicinity of such airports.

7. *Clarify laws and regulations governing use of airspace.* Authority of the Federal, State or municipal governments with respect to the regulation of the use of airspace should be clarified to avoid conflicting regulation and laws.

8. *Define navigable airspace in approach zones.* The limits of the navigable airspace for glide path or take-off patterns at airports should be defined.

9. *Extend Civil Aeronautics Act to certificate airports.* The Civil Aeronautics Act should be amended to require certification of airports necessary for interstate commerce and to specify the terms and conditions under which airports so certified shall be operated. Certificates should be revoked if minimum standards for safety are not maintained. Closing or abandonment of an airport should be ordered or allowed only if clearly in the public interest.

10. *Maintain positive air traffic control.* Certain air traffic control zones in areas of high air traffic density should be made the subject of special regulations to insure that all aircraft within the zone are under positive air traffic control at all times regardless of weather.

11. *Raise circling and maneuvering minimums.* Present straight-in instrument approach minimums are considered satisfactory but the minimum ceilings and visibilities under which aircraft are permitted to circle or maneuver under the overcast in congested terminal areas should be raised.

12. *Accelerate installation of aids to air navigation.* Research and development programs and installation projects designed to improve aids to navigation and traffic control in the

vicinity of airports, especially in congested areas, should be accelerated. Installation and adequate manning of radar traffic control systems should be given high priority.

13. *Revise present cross-wind component limits.* Existing cross-wind component limitations should be reviewed to establish more liberal cross-wind landing and take-off specifications for each transport-type aircraft.

14. *Develop and use cross-wind equipment.* Although modern transport aircraft can operate successfully in any but very strong cross-winds, the further development and use of special cross-wind landing gears should be accelerated.

15. *Extend use of single runway system.* New airports should adopt a single or parallel runway design. This should be adequate except under strong wind conditions, in which case a shorter runway at 90° to the main one may be required. Present airports should plan to develop the dominant runway at the expense of those less used. Airport expansion should be achieved through additional parallel runways.

16. *Meet standard requirements for runway length.* For each category of airport a standard runway length has been established consistent with its future planned use. Airports should bring their runways up to the standard. For intercontinental or transcontinental airports, the length of the dominant runways should be 8,400 feet with possibility of expansion to 10,000 feet if later required and with clear approaches as per Recommendations 4 and 5.

17. *Accelerate ground noise reduction programs.* Engine run-up schedules and run-up locations should be adjusted to minimize noise near airports. Adequate acoustical treatment in run-up areas and at test stands should be provided.

18. *Instruct flight personnel concerning nuisance factors.* A tight discipline with respect to airport approach and departure procedures to minimize noise nuisance to people on the ground

(within the limits of safe operating procedures) should be maintained at all times.

19. *Arrange flight patterns to reduce ground noise.* Airways and flight patterns near airports should be arranged to avoid unnecessary flight over thickly settled areas to minimize noise, but only within the limits of safe flight practice.

20. *Minimize training flights at congested airports.* Flight crew training should be conducted, as far as practicable, away from thickly settled areas and with a minimum number of flights into and out of busy airports.

21. *Minimize test flights near metropolitan areas.* Production flyaway from aircraft factories under proper conditions is acceptable but all flights of experimental aircraft and test flying of production models near built-up areas should be reduced as far as possible.

22. *Avoid military training over congested areas.* Although the basing of reserve air units at airports near cities has been considered generally desirable, and the location of certain combat units there is sometimes necessary, training maneuvers, particularly with armed military aircraft, should be conducted only over open spaces. Rapid shuttle service to an outlying military training field offers minimum interference with civil air operations and maximum safety and freedom from nuisance to people on the ground.

23. *Separate military and civil flying at congested airports.* Military aircraft should not be based on congested civil airports except when it is not economically or otherwise feasible to provide separate facilities for them nor should commercial aircraft operate regularly from busy military airports.

24. *Provide more flight crew training.* Every flight crew should be required to have frequent drills in instrument and emergency procedures. This can be accomplished in part in flight simulators. These flight simulators should be located at

convenient points and should be available to all operators on a fair basis.

25. ***Develop helicopters for civil use.*** Concurrent with military helicopter development, interested government agencies should encourage civil helicopter development for inter-airport shuttle services, and for short-haul use, emphasizing safety, reliability and public toleration factors.

APPENDIX I

Excerpts from the Harding Report on Government Organization, Interagency Coordination, and the Federal Role in Civil Aviation.
Comments of J. G. Bennett, Jr. and N. E. Halaby

APPENDIX I

EXCERPTS FROM THE HARDING REPORT ON GOVERNMENT ORGANIZATION, INTERAGENCY COORDINATION, AND THE FEDERAL ROLE IN CIVIL AVIATION. COMMENTS OF J. G. BENNETT JR. AND N. E. HALABY.

GOVERNMENT ORGANIZATION

By J. Gordon Bennett, Jr.

Prior to 1926 -- the infant days of aviation -- matters pertaining to navigation aids, communications, and air traffic control were the responsibility of the Bureau of Lighthouses. The Air Commerce Act of 1926 created an Assistant Secretary to help the Secretary of Commerce foster air commerce and designate air routes.

The Air Mail Act of 1934 established a commission to recommend a U. S. aviation policy. The recommendations of this commission contributed to the Civil Aeronautics Act of 1938 which created an independent agency called the Civil Aeronautics Authority. The Civil Aeronautics Authority was responsible not only for developing, installing, and operating airways and air traffic control facilities, but also for economic and safety regulation and accident investigation.

Under Reorganization Plans III and IV of 1940, President Roosevelt divided the Civil Aeronautics Authority -- keeping the adjudicating, economic, and accident investigation functions, and the promulgation of broad safety regulations under what we now know as the Civil Aeronautics Board. He placed airports, safety enforcement, airways, communications, and air traffic control under the Civil Aeronautics Administration. He then put the Civil Aeronautics Administration within the Department of Commerce, where it remains today.

From 1938 to 1946 there was a massive expansion and technical growth of aviation, domestic and international, civil and military. Aviation thus spread out into many new areas of our governmental structure. In order to have a coordinated government policy on both domestic and international aviation, the President in 1946 established the Air Coordinating Committee. The mission of the Air Coordinating Committee was to examine aviation problems and developments affecting more than one participating agency and to develop and recommend integrated policies.

As post-war civil and military air traffic increased, delays caused by inadequate air navigation and traffic control facilities increased. To meet their individual needs, civil and military agencies were developing separate devices for air navigation and traffic control. In 1947 the need for development of a single or "common system" was recognized and an industry-government advisory organization, founded in 1935, and known as the Radio Technical Commission for Aeronautics, drew up the basic requirements of such a system.

In order to keep the civil and military agencies coordinated in the implementation of this long-range effort, the Air Navigation

Development Board was created in 1948. The Air Navigation Development Board was charged with preparing a single budget for all research and development required in connection with the common system, and neither the civil nor the military agencies were to begin or maintain any research and development without the express authorization of the Board.

In summary then, the present responsibility for Aviation Facilities development, within the Government, is distributed somewhat as follows:

- The Civil Aeronautics Administration has the responsibility for operating the airways.
- The military services fly under Civil Aeronautics Administration's control but must, of necessity, provide certain traffic control and air navigation services to meet their own requirements, if the Civil Aeronautics Administration is unable to meet them.
- The Air Coordinating Committee has the responsibility for coordinating broad aviation policies.
- The Air Navigation Development Board is responsible for coordinating Aviation Facilities development programs.
- The Radio Technical Commission for Aeronautics is a government-industry advisory organization with no continuing official government status; which serves upon request.

There are now over 75 committees, subcommittees, and special working groups addressing themselves to Aviation Facilities matters. The existence of so many groups is not, in itself, an evil, but it is increasingly apparent that the process of coordination is becoming more and more time consuming, and that preoccupation with current issues tends to obscure forward vision.

Reproduced from best available copy.

Section 6

THE ORGANIZATION OF A STUDY LEADING TO A PLAN FOR A NATIONAL AVIATION FACILITIES SYSTEM

By N. E. Halaby

It is clear that a great deal of effort has been made to coordinate the activities of various government departments and agencies in the development and operation of Aviation Facilities. But it is also clear that the development of the required facilities is lagging far behind the needs of aviation.

It seems appropriate to re-examine the organizational structure of the government for handling the planning, programming, and development of a national Aviation Facilities system.

We find that none of the interdepartmental committees dealing with coordination has any independent executive authority. Their members serve only on a part-time basis and the membership changes frequently. While it was originally intended that, in addition to exercising their coordinating functions, they would be instrumentalities for the development of forward looking policies, they have, in practice, become primarily mechanisms wherein the representatives of various Federal agencies meet to debate and, whenever possible, coordinate action on pressing current problems. Furthermore, the coordination among the committees themselves has become a problem, and the delineation of their respective functions is not always clear.

It is not our desire to belittle the useful functions which these organizations perform, but we do wish to note their practical limitations. We think it is abundantly clear that, because of their basic structure, they cannot be expected to provide the dynamic leadership required for origination and development of a comprehensive national Aviation Facilities system. Certain essential elements of effective government action seem to be missing -- full time direction, full disclosure of departmental information and plans, closely coordinated budgetary planning and funding, and a unified approach to the Congress in matters of appropriations.

Most of the reports which come out of these committees appear to be statements of requirements, which may be excellent in themselves; but these requirements require budgetary support and authoritative decision and assignment of necessary resources before they can become programs ready to be put into action.

A recent report of Special Working Group No. 13 of the Air Coordinating Committee, entitled "Aids to Air Navigation and Landing", contains two statements which illustrate the problem:

> "It has been concluded that 'research and development programs have been severely handicapped for lack of continued participation

> of operational planning groups.' Such groups 'after writing reports and recommendations, disbanded and their sponsoring agencies did not continue to review progress and keep operational requirements up to date'."
>
> "There has been insufficient recognition of air traffic control requirements from a budgetary standpoint. Not only is strong budgetary support needed for the immediate needs of the air traffic control system, but strong support is needed for a proper research and development program for air traffic control. This is essential because it is impossible to imagine that any air traffic control system will in itself become the ultimate. Keeping pace with the rapid advancements in aircraft design will actually result in a series of so-called 'ultimate' systems which through evolution will in themselves become interim transitions to a better system."

It seems evident that there is a need for forceful, high level direction of the studies leading to a national Aviation Facilities program. Inasmuch as the regular departments of the government are fully occupied with heavy operating responsibilities which are diverse and sometimes conflicting, and as the interdepartmental committees are fully occupied in resolving day-to-day conflicts, it seems logical to conclude, as we have done, that the direction of the study necessary for intelligent future planning should be established elsewhere in the government.

It is our conclusion that the study should be undertaken within the framework of the executive branch and should be headed by an individual serving under a temporary appointment in the Executive Office of the President.

The personal qualifications of the individual selected for this assignment are of paramount importance, in our opinion. He will have to exercise a high degree of leadership in dealing with the disputes which will inevitably arise as a result of the varying objectives of the users of our airspace. The Armed Forces, for example, aggressively strive for optimum combat performance other considerations being secondary. The airlines put safety and economy ahead of maximum performance. The owners and operators of small private and miscellaneous commercial aircraft are often unable to afford some of the very expensive and heavy equipment that the military, the airlines and large business aircraft operators may be willing to buy, and therefore sometimes find themselves at odds with both the military and the scheduled airlines.

We believe that placing responsibility on an individual is more likely to produce successful results than would be the case if the assignment were made to a board, committee or commission, although we recognize that the individual selected might desire an advisory commission or committee to help him, and may need to enlist the aid of talents available outside of the government.

We believe the urgency of the problem is such that no effort should be spared to find an individual of superior talents and proper background who has the President's confidence and who can work on a basis of mutual trust and respect with those members of the Cabinet most directly concerned.

Source: U. S. Aviation Facilities Study Group, W. B. Harding, Chairman. Aviation Facilities; The Report of the Aviation Facilities Study Group to the Director, Bureau of the Budget, Dec. 31, 1955, pp. 24-33.

APPENDIX J

Contractor Reports for Curtis Report

APPENDIX J

CONTRACTOR REPORTS FOR CURTIS REPORT

Vol. I. Summary - Final Report on National Requirements for Aviation Facilities 1956-1975 -- (Airborne Instruments Laboratory, Cornell Aeronautical Laboratory, Aeronautical Research Foundation), May 1957.

Covers in broad terms the character of air traffic today and over next twenty years; aircraft characteristics; and forecast of air commerce and general aviation.

Vol. II. Air Traffic Volume -- (Airborne Instruments Laboratory), May, 1957.

Covers in detail the techniques and results of an air traffic survey in eight air traffic hubs and along one enroute area and relates this survey to 48 other important hubs. The data are in terms of the numbers of airplanes in the air at different instants during the day and the numbers of movements per hour. This type of interpretation of air traffic is applied to future years.

Vol. III. Aircraft Characteristics -- (Cornell Aeronautical Laboratory), May, 1957.

Describes in detail evolving performance characteristics of commercial and private aircraft over next twenty years. A classified supplement covering future military aircraft performance characteristics was available to authorized persons.

Vol. IV. Forecast of Aviation Activity -- (Aeronautical Research Foundation), June, 1957.

Describes in detail the research and the findings of the Aeronautical Research Foundation with respect to the national economy, air carrier passenger traffic, and air carrier and general aviation aircraft movements in the Nation, and in eight selected metropolitan areas over the next twenty years.

Vol. V. Modernizing the National System of Aviation Facilities -- (Curtis Systems Engineering Team), May, 1957.

Describes a concept of air traffic control as a guide for the modernization of the Nation's aviation facilities. It also sets forth a three-part program" (1) to obtain the most efficiency in the current Federal airways; (2) the application of existing technology for the modernization of air traffic control; and (3) a method for continuing modernization of the system.

APPENDIX K

Recommendations of the Curtis Group Concerning Aircraft Noise

Vol. V. Modernizing the National System of Aviation Facilities -- (Curtis Systems Engineering Team), May, 1957.

Describes a concept of air traffic control as a guide for the modernization of the Nation's aviation facilities. It also sets forth a three-part program" (1) to obtain the most efficiency in the current Federal airways; (2) the application of existing technology for the modernization of air traffic control; and (3) a method for continuing modernization of the system.

APPENDIX K

Recommendations of the Curtis Group Concerning Aircraft Noise

APPENDIX K

RECOMMENDATIONS OF THE CURTIS GROUP CONCERNING AIRCRAFT NOISE.

Source: Office of Aviation Facilities Planning, the White House, Modernizing the National System of Aviation Facilities, pp 61-62.

IX. AIRCRAFT NOISE

A factor exerting tremendous influence on current airport design is the consideration of aircraft noise resulting from landing and takeoff operations as well as maintenance operations on the airport. This consideration becomes increasingly important as air traffic grows, as airports approach capacity operation, and as the new jet aircraft are introduced into operation.

To minimize the potential effect of this factor, the airport planner should—

a. Align runways consistent with operational considerations, such as air traffic control and wind requirements, to make maximum use of natural open areas, such as waterways and parks, for approach and departure paths.

b. Provide areas on the airport which, through location or construction of physical facilities, will keep ground runup noise level to a reasonable value.

The Federal Government should—

a. Encourage research to minimize the noise generated by both military and civil aircraft. Obviously, to avoid interference with the primary defense mission, the limitation on military aircraft may, from necessity, be less severe than that for civil aircraft. However, much pioneering work in this field can be accomplished and applied to military aircraft, and thus benefit the communities in those areas where military operations are conducted.

b. Consider the noise factor in adopting air traffic control procedures, in order to minimize noise to the communities, within the limits of providing safe, efficient air traffic control.

c. Provide the installations needed to support noise control procedures adopted as a result of item b. For instance, instrument runways should be completely equipped for bidirectional use, thereby practically eliminating the need for low-altitude circling during IFR conditions. For the very small percentage of approaches during IFR weather which cannot be accommodated on the main instrument runway when it is equipped for bidirectional use, procedures should be developed for straight-in letdown to cross runways.

The control of aircraft noise during landing and takeoff operations must be accomplished in the manner which will permit maximum development of our present airport system. To assume that the problem can be solved by moving airports out of developed areas is fallacious. Airports must be located to serve the traffic-generating areas, which means they must be relatively close to these areas. Further, large metropolitan areas have such a tremendous potential for air traffic development that existing airports, as well as new airports, will be needed to handle this capacity. The air traffic control system needed to feed airport complexes in large metropolitan areas will require that existing airports be expanded to their maximum, and that new airports be located far enough from existing airports to avoid conflict between approach and departure paths. The solution to the aircraft noise problem will lie in reducing the noise at the source—the aircraft engine.

APPENDIX L

Organization of and Persons Cooperating with the Card Study

✓

APPENDIX L

ORGANIZATION OF AND PERSONS COOPERATING WITH THE CARD STUDY.

ADVISORY COMMITTEE

An Advisory Committee, organized within the framework of the National Academy of Engineering, was established at the outset and provided invaluable advice and guidance in the course of the Joint Study. Members of the Advisory Committee were:

Chairman
H. Guyford Stever
President
Carnegie-Mellon University

Vice Chairman
Raymond L. Bisplinghoff
Deputy Director
National Science Foundation

Harmer E. Davis
Director, Institute of Transportation and Traffic Engineering
University of California

John E. Gallagher
President
McCulloch International, Inc.

James E. Gorham
Vice President
Systems Analysis and Research Corporation

Robert E. Hage
Vice President for Engineering
Douglas Aircraft Company

Willis L. Hawkins
Senior Vice President for Science and Engineering
Lockheed Aircraft Corporation

Samuel L. Higginbottom
President
Eastern Air Lines, Inc.

James E. Knott
Vice President and General Manager
Allison Division
General Motors Corporation

John M. Kyle, Jr.
Chief Engineer
The Port of New York Authority
(Deceased September 29, 1970)

William P. Lear, Sr.
Chairman of the Board
Lear Motors Corporation

George B. Litchford
Consultant

William C. Mentzer
Senior Vice President for Engineering and Maintenance
United Air Lines, Inc.

Rene H. Miller
Head, Department of Aeronautics and Astronautics
Massachusetts Institute of Technology

James P. Mitchell
Vice President
Chase Manhattan Bank

James M. Nissen
Manager
San Jose Municipal Airport

William L. Pereira
President
William L. Pereira & Associates

Perry W. Pratt
Vice President and Chief Scientist
United Aircraft Corporation

Stanley Seltzer
Director of Air Traffic Control Research
American Airlines, Inc.

George E. Solomon
Vice President and Director of
Systems Laboratories
TRW Systems Group, TRW, Inc.

Edward J. Swearingen
President
Swearingen Aircraft

Dwane L. Wallace
Chairman and Chief Executive Officer
Cessna Aircraft Company

MANAGEMENT COMMITTEE

The work of the Joint Study was accomplished under the general direction of a Management Committee, made up of:

Chairman
Robert H. Cannon, Jr.
Assistant Secretary for Systems Development and Technology
Department of Transportation

Neil A. Armstrong
Deputy Associate Administrator for Aeronautics
National Aeronautics and Space Administration

Roy P. Jackson
Associate Administrator for Advanced Research and Technology
National Aeronautics and Space Administration

Vice Chairman
Alfred J. Eggers, Jr.
Assistant Administrator for Policy
National Aeronautics and Space Administration

Gustav E. Lundquist
Associate Administrator for Engineering and Development
Federal Aviation Administration

Robert N. Parker
Deputy Assistant Secretary for Systems Development and Technology
Department of Transportation

JOINT STUDY STAFF

The Joint Study was staffed with selected personnel from the following agencies:

Civil Aeronautics Board
Department of the Air Force
Department of the Army
Department of the Navy
Department of Transportation
National Aeronautics and Space Administration

The following individuals participated:

Executive Director[1]
Clarence A. Syvertson
Department of Transportation

Charles C. Baker, Colonel
United States Air Force

Deputy Director
Clotaire Wood
National Aeronautics and Space Administration

James S. Bauchspies, Lt. Col.
United States Army

---

[1] Lawrence P. Greene served as Executive Director of the Joint Study from its beginning until July 1970.

Neal A. Blake
Federal Aviation Administration

Lee K. Breece
Department of Transportation

William F. Brown
Department of Transportation

Allan C. Butterworth
Consultant

William H. Close
Department of Transportation

Paul E. Cotton
National Aeronautics and Space Administration

Theodore P. Crichton, Colonel
United States Air Force

Hubert M. Drake
National Aeronautics and Space Administration

Walter W. Felton
Federal Aviation Administration

George B. Graves, Jr.
National Aeronautics and Space Administration

Richard C. Hannon
Department of Transportation

S. Paul Johnston
Consultant

Cletus C. Kresge, Colonel, USAF
Department of Transportation

Samuel A. LaMar
Consultant

David A. Lehman
President's Commission on Executive
Personnel Interchange
IBM Corporation

Alfonso B. Linhares
Department of Transportation

John G. Lowry
National Aeronautics and Space Administration

Robert L. Maxwell
Department of Transportation

Bedford D. May
Department of Transportation

James C. McCollom
National Aeronautics and Space Administration

Myron Miller
Department of Transportation

James H. Mollenauer
Federal Aviation Administration

William J. Nemerever
Consultant

Norman G. Paulhus, Jr.
Department of Transportation

Richard H. Petersen
National Aeronautics and Space Administration

John O. Powers
Federal Aviation Administration

William E. Simpson, Captain
United States Navy

Stanley M. Smolensky
National Aeronautics and Space Administration

Philip J. Steece
Federal Aviation Administration

Fred R. Steven
National Aeronautics and Space Administration

William Weinfeld
Civil Aeronautics Board

Paul D. Wilburn
Federal Aviation Administration

Wilbur Williams
Department of Transportation

Richard J. Wisniewski
National Aeronautics and Space Administration

Additional individuals who also participated in the Joint Study are: William H. Allen, Francis J. Bassett, G. W. Cleven, Benjamin F. L. Darden, Lee D. Goolsby, Harold Hoekstra, Jules I. Kanter, Marcus A. Kaplan, George C. Kenyon, Laurence K. Loftin, Jr., Daniel P. Maxfield, Marion Maxfield, Vernon S. Meissner, Charles E. Miller, Clyde W. Pace, Jr., Walter N. Pike, Lewis W. Still, and Richard J. Wasicko.

SPECIAL ACKNOWLEDGEMENT

The Joint DOT–NASA Civil Aviation Research and Development Policy Study was first recommended by Dr. Glen P. Wilson of the staff of the Senate Committee on Aeronautical and Space Sciences. Dr. Wilson made a preliminary study in the summer of 1965.

CONTRACTORS

The following contractors provided information used in the course of the Joint Study:

Arthur D. Little, Inc.
Aviation Data Service, Inc.
Booz, Allen Applied Research, Inc.
Control Data Corporation
George Washington University
Lockheed-Georgia Company
Massachusetts Institute of Technology
McDonnell Douglas Corporation
Operations Research, Inc.
Peat, Marwick, Mitchell & Company
Planning Research Corporation

COOPERATING ORGANIZATIONS

The Joint DOT–NASA Civil Aviation R&D Policy Study acknowledges the assistance and advice of the following agencies and organizations:

Aerospace Industries Association of America
Air Transport Association of America
Department of Commerce
Department of Defense
Department of Housing and Urban Development
Department of Justice
Department of State
Export-Import Bank of the United States
General Aviation Manufacturers Association
Interstate Commerce Commission
Library of Congress
National Aeronautics and Space Council
National Science Foundation
National Transportation Safety Board
President's Advisory Council on Executive Organization
Radio Technical Commission for Aeronautics
Science Council of Canada
Scientific Manpower Commission
Transportation Association of America

Source: U. S. Department of Transportation and National Aeronautics and Space Administration. Civil Aviation Research and Development Policy Study, DOT TST-10-4 and NASA SP-265. Washington, D. C., March 1971, Appendix B, pp 11-5 to 11-8.

APPENDIX M

RADCAP Study Organization

Reproduced from best available copy.

APPENDIX M

RADCAP STUDY ORGANIZATION

STEERING GROUP

Thomas C. Muse, Chairman	DoD/DDR&E
Laurence K. Loftin, Jr.	DoD/SAFRD
Cleotaire Wood/Richard Wisniewski	NASA
Allan C. Butterworth	DoT

WORKING GROUP

Col John G. Paulisick	DoD/USAF(AFSC/ASD)
James E. Singer	DoD/USAF(AFSC/ASD)
Carl L. Meyer	NASA/Lewis
Philip Donely	NASA/Langley
Charles C. Troha	DoT

WORKING GROUP ADVISORS

J. Arthur Boykin, Jr.	DoD/USAF(AFSC/ASD)
John E. Short	DoD/USAF(AFSC/ASD)
John S. Attinello	IDA

WORKING GROUP PANEL CHAIRMEN

Propulsion and Power	
Charles R. Hudson, Jr.	DoD/USAF(AFSC/AFAPL)
Meteorology	
Maj James B. Gebhard	DoD/USAF(AWS)
Robert E. Dean (Alternate)	DoD/USAF(AWS)
Avionics	
Richard J. Framme	DoD/USAF(AFSC/ASD)
Materials	
Albert Olevitch	DoD/USAF(AFSC/AFML)
Human Factors/Aviation Medicine	
Dr. Walter F. Grether	DoD/USAF(AFSC/AMRL)

RADCAP STUDY ORGANIZATION (Continued)

WORKING GROUP PANEL CHAIRMEN (Continued)

Air Vehicle Technology	
Howard A. Magrath	DoD/USAF(AFSC/AFFDL)
Technology Base Relevancy/Civil Aviation	
Capt Jerry R. Stockton	DoD/USAF(AFSC/ASD)
Development Base Relevancy/Civil Aviation	
Fred D. Orazio, Sr.	DoD/USAF(AFSC/ASD)
Aeronautical R&D Funding	
Kelsey P. Schlosser	DoD/USAF(AFSC/ASD)

Source: U.S. Dept. of Defense, NASA, Dept. of Transportation. R & D Contributions to Aviation Progress, Aug. 1972, Vol. I, pp 4-5.

APPENDIX N

Members, Staff, Consultants, and Organizations Assisting the Aviation Advisory Commission

APPENDIX N

MEMBERS, STAFF, CONSULTANTS AND ORGANIZATIONS ASSISTING THE AVIATION ADVISORY COMMISSION

Source: U.S. Aviation Advisory Commission. Report. The Long Range Needs of Aviation. January 1, 1973.

AVIATION ADVISORY COMMISSION

CROCKER SNOW, Chairman
Director
Commonwealth of Massachusetts
Aeronautics Commission

LESLIE O. BARNES
President
Allegheny Airlines, Inc.

LAURETTA FOY
Chief Pilot
Southland Helicopters
Los Angeles, California

GERALD GRINSTEIN, Partner
Preston, Thorgrimson, Starin,
Ellis and Holman
Attorneys-at-law
Seattle, Washington

JAMES S. McDONNELL
Chairman of the Board
McDonnell Douglas Aircraft Corporation
St. Louis, Missouri

RAI Y. OKAMOTO
President
The Okamoto Associates
Planners and Architects
San Francisco, California

WILLARD G. PLENTL
Director
Commonwealth of Virginia
Division of Aeronautics

ELVIS J. STAHR
President
National Audubon Society
New York City

THOMAS M. SULLIVAN
Executive Director
Dallas/Fort Worth Regional Airport Board

STAFF

Beverlee K. Ahlin
John P. Ahrendes
Diane L. Barringham
George W. Baughman
Jane L. Bitting
George F. Brewer
Thomas E. Burnard
Rose M. DeSimone
Frank H. Ferguson
John W. Gooding
Margaret W. Hart
Maria Jenkins
George W. Kinney
Cletus C. Kresge
Pauline A. Labrie
Evelyn C. Lombardi
Mark Mason
Harvey J. Nozick
Esther M. Patras
John J. Pfarr
Alviadean Ramseur
Mary Nel J. Ryals
Peter Schauffler
Barbara S. Schilberg
Christine A. Schweitzer
Jeanne M. Stroude
Maurice A. Sulkin
Mary J. Tolbert
John P. Woods

* * * * * *

The average size of the staff at any one time was fourteen people.

Contractors & Consultants

- AVIATION MANAGEMENT INT'L.
  - Mary Anderson
- BACK & STERLING ASSOCIATES
  - Peter Back
- BATTELLE COLUMBUS LABORATORIES
  - Dr. Alfred Robinson
- RICHARD J. BARBER
  - (National Academy of Sciences)
- BOLT, BERANEK & NEWMAN
  - Dr. William J. Galloway
- BOOZ ALLEN APPLIED RESEARCH
  - Dr. William P. Sommers
- FRANK B. BRADY
  - (Kearfott Division Singer-Precision)
- JOHN M. BURZIO
- ROBERT BURKHARDT
- DR. JAMES G. COKE
  - (Kent State University)
- CHARLES STARK DRAPER LABS
  - Dr. Charles Stark Draper
- KENNETH M. ELDRED
  - (Wyle Labs)
- JOHN B. FISHER
- GLEN A. GILBERT ASSOCIATES
  - Glen A. Gilbert
- DR. ROBERT HORONJEFF
  - (University of California)
- KENDALL K. HOYT
- LOUIS T. KLAUDER
  - (Louis T. Klauder & Associates)
- LANDRUM & BROWN INC.
  - Charles Landrum
- LINCOLN LABORATORIES
  - Massachusetts Institute of Technology
  - Dr. Herbert G. Weiss
- ARTHUR D. LITTLE, INC
  - Dr. Alan Donheiser
- GROVER LOENING
- DR. DORN C. McGRATH
  - (George Washington University)
- JAMES B. MINOR
- DR. RENE MILLER
  - (Massachusetts Institute of Technology)
- MITRE CORPORATION
  - Charles Zraket
  - Robert Nutter
  - Arnold Cohen
- NORTHROP AIRPORT DEVELOPMENT CORP.
  - Winfield Arata
- OPERATIONS RESEARCH, INC.
  - Dr. Howard Eisner
- DAPHNE M. PETTY
  - Daphne M. Petty Associates
- SANBORNE ASSOCIATES
  - William F. Burke
- SIMAT, HELLIESEN & EICHNER
  - Nathan S. Simat
- DR. ROBERT W. SIMPSON
  - (Flight Transportation Center, MIT)
- RICHARD AUSTIN SMITH
- R. DIXON SPEAS & ASSOCIATES
  - R. Dixon Speas
- SYSTEMS ANALYSIS & RESEARCH CORPORATION
  - James H. Gorham
- SIMPSON & CURTIN
  - Robert Hartwig
- ROBERT H. TARR
  - (Engineering & Economic Planning Group)
- TEMPLE, BARKER & SLOANE
  - Dr. Paul Cherington
- JOSEPH C. WATSON

AAC Studies

REPORT ON NATIONAL GOALS, September 1971, Systems Analysis Research Corporation

REPORT ON EXISTING AVIATION POLICIES, September 1971, James B. Minor, and Joseph C. Watson

CRITERIA FOR EVALUATION OF AVIATION SYSTEM CONCEPTS Final Report, March 31, 1972, Operations Research, Inc.

AVIATION NEEDS 1972-2000, PRELIMINARY FUTURE CONCEPTS, April 3, 1972, R. Dixon Speas Association, Inc.

FORECAST TECHNOLOGICAL PROBABILITIES, Final Report Task 220, February 1972, Northrop Airport Development Corporation

SYSTEM SELECTION STUDY, TECHNOLOGY ASSESSMENT, May 26, 1972, Booz-Allen Applied Research, Inc., Landrum & Brown, Inc., Simpson & Curtin, Inc. (Draft)

SYSTEM SELECTION STUDY, SYSTEMS EVALUATION, May 17, 1972, Booz Allen Applied Research, Inc., Landrum & Brown, Inc., Simpson & Curtin, Inc. (Draft)

(IMPLEMENTATION) INFORMATION MEMORANDUM - AAC, Volumes I and II, April 10, 1972, Arthur D. Little, Inc.

IMPACT OF BUSINESS JETS ON COMMUNITY NOISE EXPOSURE, August 21, 1972, Bolt, Beranek, and Newman, Inc.

COST ESTIMATES FOR REMOVAL OF RESIDENTIAL & RELATED LAND USES NEAR SELECTED AIRPORTS, August 25, 1971, Back & Sterling, Inc.

CLASSIFICATION OF AIRPORT ENVIRONS BY AIRPORT/COMMUNITY LAND USE COMPATIBILITY, January 28, 1972, Back & Sterling, Inc.

Acknowledgements

The Commission has benefited greatly from the advice and assistance of a large number of individuals and organizations. All of them will be gratefully acknowledged in the Technical Annex. Listed here are only the 56 organizations which helped in the selection of major issues, and those that participated in Commission conferences to develop those issues.

Organizations Responding To Major Issues Questionnaire

Aerospace Industries Association of America, Inc.
Aircraft Owners & Pilots Association
Air Line Employees Association, International
Air Line Pilots Association
Air Traffic Control Association, Incorporated
Air Transport Association of America
Airline Passengers Association
American Association of Airport Executives
American Institute of Aeronautics & Astronautics
American Institute of Planners
American Society of Civil Engineers
American Society of Planning Officials
Association of Local Transport Airlines
Aviation Development Council
Aviation Distributors and Manufacturers Association
Civil Aeronautics Board
Dallas/Ft. Worth Regional Airport Board
Department of Commerce
Department of Defense
Department of Housing & Urban Development
Department of Health, Education & Welfare
Department of Transportation
Experimental Aircraft Association
Federal Aviation Administration (DOT)
Federal Communications Commission
Flight Safety Foundation, Inc.
General Aviation Manufacturers Association
Izaak Walton League of America, Inc.
National Aeronautic Association
National Aeronautics and Space Administration
National Air Transportation Conferences, Inc.
National Association of State Aviation Officials
National Aviation Trades Association
National Business Aircraft Association, Inc
National Center for Urban and Industrial Health
National Governors' Conference
National Heliport Standards Council
National League of Cities
National Parks and Conservation Foundation
National Pilots Association
National Resources Defense Council, Inc.
National Transportation Safety Board (DOT)
National Wildlife Federation
Preston, Thorgrimson, Starin, Ellis & Holman
Professional Air Traffic Controllers Organization
Radio Technical Commission for Aeronautics
Society of Automotive Engineers, Inc.
Sierra Club
Society of Air Safety Investigators
Soaring Society of America
The Conservation Foundation
The Everglades Council
Transportation Association of America
United Automobile, Aeronautics & Agricultural Implement Workers of America—UAW
U. S. Conference of Mayors

APPENDIX O

Members and Consultants, Task Group 1, EPA Aircraft/Airport Noise Study

Reproduced from best available copy.

APPENDIX O

MEMBERS AND CONSULTANTS, TASK GROUP I, EPA AIRCRAFT/AIRPORT NOISE STUDY.

I. Members	Representing
Ms. Elizabeth Cuadra (Chairman)	Environmental Protection Agency
Mr. George Alderson	Friends of the Earth
Mr. David Bach	Environmental Protection Agency
Ms. Judy Campbell Bird	National Association of Counties
Mr. Wallace E. Brown	Department of Commerce
Mr. John E. Bryson	Natural Resources Defense Council, Inc.
Mr. George U. Carneal, Jr.	
Mr. Dick Danforth	Federal Aviation Administration
Mr. Clifford A. Deeds	Town-Village Aircraft Safety and Noise Abatement Committee (TVASNAC)
Mr. Dick Denney	Environmental Protection Agency
Mr. Charles H. Dudley	Department of State
Mr. Dick Dyer	National Association of State Aviation Officials
Dr. Marjorie W. Evans	Sierra Club
Ms. Ellen S. D. Flynn	Council of State Governments
Ms. Joan S. Gravatt	Department of State
Mr. Stanley J. Green	General Aviation Manufacturers Association
Mr. Georgr Grumbach	Air Transport Association of America
Ms. Janet Gray Hayes	City of San Jose, California
Mr. John Hellegers	Environmental Defense Fund
Mr. Lloyd Hinton	National Organization to Insure a Sound-Controlled Environment (NOISE)

I. Members	Representing
Mr. Steven Horowitz	Department of Housing & Urban Development
Mr. Craig W. Johnson	Natural Resources Defense Council, Inc.
Mr. Daniel Joseph	Department of Transportation
Mr. George Lapham	Air Transport Association of America
Ms. Catherine Lerza	Environmental Action, Inc.
Mr. Joseph Lesser	Airport Operators Council International
Mr. Neil G. McBride	Aviation Consumer Action Project
Mr. Ivars V. Mellups	Civil Aeronautics Board
Brig. Gen. Martin Menter	
Mr. Charles Miller	Aircraft Owners & Pilots Association
Ms. Isobel Muirhead	Airport Operators Council International
Mr. John Nammack	National Association of State Aviation Officials
Ms. Elizabeth Parker	National League of Cities and U.S. Conference of Mayors
Mr. Robert H. Rollins II	National Aeronautics and Space Administration
Mr. Seth Rosen	Airlines Pilots Association
Ms. Gail Schultz	American Institute of Planners
Mr. George P. Smith	Environmental Protection Agency
Mr. Larry Snowhite	National League of Cities and U.S. Conference of Mayors
Mr. Robert J. Stowell	The Boeing Company
Mr. Lyman Tondel	Air Transport Association of America
Mr. Robert L. Tully	Airline Pilots Association
Mr. John M. Tyler	National Organization to Insure a Sound-Controlled Environment (N.O.I.S.E.)

I. Members	Representing
Mr. John E. Varnum	Department of Justice
Mr. Geoffrey Vitt	Environmental Defense Fund
Mr. R. Timothy Weston	Council of State Governments,

II. Other Participants (EPA Consultants and Contractors)	
Ms. Betsy Amin-Arsala	George Washington University
Mr. Peter P. Back	Consultant in Economics
Ms. Joan Gelber	George Washington University
Mr. Louis B. Mayo	George Washington University
Mr. Robert E. O'Brien	Environmental Protection Agency
Mr. Robert L. Randall	Legal Consultant
Mr. Edward Studholme	George Washington University
Mr. Ernest Weiss	George Washington University

Note: The membership list includes all persons who attended one or more meetings but does not include individuals serving as occasional alternate of their organization's usual representative.

Source: U.S. Environmental Protection Agency. Draft Report on Legal and Institutional Analysis of Aircraft and Airport Noise and Apportionment of Authority between Federal, State, and Local Governments, June 1, 1973.

APPENDIX P

Excerpt from Report of Task Group 1, EPA Aircraft/Airport Noise Study

Reproduced from best available copy.

APPENDIX P

EXCERPT FROM REPORT OF TASK GROUP 1, EPA AIRCRAFT/AIRPORT NOISE STUDY.

POTENTIAL OPTIONS FOR MODIFYING THE EXISTING LEGAL/ INSTITUTIONAL SYSTEM: ALTERNATIVES

Having discussed the problems encountered in the present legal/institutional framework for solving the aircraft/airport noise problem, this section analyzes the major alternatives both for actions pursuant to the current institutional arrangements and authority, and for modification of the legal/institutional arrangements. Each of the problems identified in Section 1-4 will be addressed and alternatives for its solution discussed. Some of these alternatives can be accomplished under existing legal authority while others would require new legislation on either the Federal, State or local level.

The advantages and disadvantages of each alternative, to the extent they can be identified, will be evaluated. Finally, in the next section, the Task Group Recommendations, chosen from among these alternatives, will be presented.

HOW TO ASSURE EXCHANGE OF AGENCY EXPERTISE, INFORMATION, AND VIEWPOINTS

It was noted above that a substantial number of Federal agencies—as well as State and local governments—have expertise, information, and important viewpoints which should be considered in solving the airport noise problem. There are a number of ways such expertise can be exchanged, and adequate balancing of information and opinion promoted.

1. Agencies can exchange reports through a clearinghouse, such as the EPA noise research coordination process under the Noise Control Act.
2. Agencies can be required to review and comment upon proposed regulatory actions, as under the Noise Control Act, NEPA, and the A-85 process.

3. Agencies having special expertise or authority can be required formally to present their findings and determinations to the regulatory body having jurisdiction over the final decision, as for example, EPA is required to propose to the FAA those regulations EPA determines are necessary to protect health and welfare.

4. An interagency body could be formed of concerned agencies to discuss all aspects of the problem and recommend appropriate actions to the responsible regulatory bodies.

5. An interagency body could be formed which would establish a coordinated program and exercise actual rulemaking authority binding on all the concerned agencies.

Both 1 and 2, report exchange and proposed action review, are passive measures While these options promote interagency input of information, they do not address the need to hammer out a coordinated attack on the noise problem by all of the responsible authorities. Review and comment procedures, in particular, are reactive processes—only engaged when action is proposed. Yet much of the problem is not ill-thought action but inaction—an issue which is not amenable to solution by a review and comment requirement.

Option 3, the formulation of formal input requirements, is an alternative first suggested in Section 7 of the Noise Control Act. Under a formal input procedure, for example, EPA would be required to determine and report to the FAA those levels of noise found adverse to public health and welfare and recommend actions to avoid such adverse effects. Similarly, NASA could be required to determine and inform the FAA whenever it found a particular strategy was technically feasible, safe, and effective, together with its estimate of the cost of implementing the technology. And HUD could be required to report the land use problems incurred by both airport noise and alternative noise abatement strategies.

The advantage of the formal determination and report process is that it is dynamic and not reactive. Information and views which should stimulate new regulatory and abatement programs would be exchanged prior to formulation of regulatory actions, rather than in reaction to proposals. However, mere exchange of information and determinations is ineffective unless the regulatory body to which they are addressed has a duty to review and respond to the information. In this respect, for example, the Noise Control Act contains provisions requiring FAA hearings and formal adoption or refutation of EPA proposals, guaranteeing that the information and views exchanged do not languish in files, but are actually acted upon.

Provisions extending formal input and response requirements to the determinations of NASA, HUD and/or HEW would require amendment of §611 of the Federal Aviation Act, although probably the same process could be established via an executive order requiring the FAA to solicit the views of other agencies and action thereon within a specified time.

Although a formal determination exchange procedure may have salutory effects in promoting regulatory action in the noise area, there is some fear this scheme may result in a process of interagency "ping-pong" and regulatory impass. There is a distinct need, not just to make appropriate findings, but to reconcile the information thus brought together and formulate a coordinated program for solving the problem. This cannot be done by an exchange of memos, but requires some method of bringing all the concerned agencies together in the policy-making and decision-making process.

A continuing interagency exchange and coordination process could be accomplished through formation of some type of Interagency Aircraft/Airport Noise Abatement Committee (IAANAC). Two types of interagency group are possible. The first, which could be established by executive order, would be formed of representatives from concerned agencies—such as FAA, DOT, NASA, EPA, HUD and HEW—and charged with developing coordinated approaches to the problem and recommending appropriate actions to the member agencies. Under this option, actual regulatory power and final decision authority would remain in the respective agencies. The second type of group would be composed of similar representatives, but would have the power to make decisions binding upon the member agencies—that is, to exercise real regulatory authority. The latter type of authority could be conferred only by new legislation.

Both types of IAANAC would serve the function of providing a forum to work out a coordinated control and abatement program. The extent to which the first will succeed, however, is dependent on three conditions:

1. That the representatives are appointed from policy making levels in each agency, and are not merely technical advisors.
2. That each agency commit itself, to the maximum extent possible, to implementing the recommendations arrived at by the interagency group.
3. That the interagency committee determinations and recommendations are regularly made part of the public record through publication and promulgation in the Federal Register.

An interagency committee with final policy and regulatory powers would be free of the problem of obtaining voluntary compliance and cooperation by all concerned agencies. On the other hand, shifting of responsibility for land use, aircraft design, airport operations, research, and environmental effects decisions as to noise to one interagency group might raise the problem of coordinating those decisions with similar aircraft, airport, land use and environment programs remaining in the original agencies. The solution must be a mechanism which allows both coordination of the noise abatement program and coordination of the noise program elements with other regulatory, development and environmental programs. Further, the total noise environment is what must be reduced, and not just the contribution made to it by any single type of noise source, and therefore any process which tends to decouple the abatement planning for one source type from the overall exposure limitation goal is undesirable.

An available mechanism which might be considered is that of the Office of the Secretary of Transportation. The OST presently presides over a confederated

Department of Transportation, with most, if not all, of its modal agencies (i.e., FAA, FHWA, etc.) acting independently from direct DOT supervision. Yet many of these modal agencies have an interest in transportation noise abatement generally. Thus the OST, which at least in theory has direct control over the FAA, could be used as a home for an interagency committee with final policy and regulatory authority.

Alternatively, because of the need to coordinate noise abatement with respect to all sources in order to achieve limitation of cumulative noise exposure according to public health and welfare needs, the coordination of aircraft/airport noise abatement could be carried out by a subcommittee, which would be part of an interagency noise abatement committee chaired by EPA as a part of its coordination responsibilities under Section 4(c) of the 1972 Act.

Source: U.S. Environmental Protection Agency. Draft Report on Legal and Institutional Analysis of Aircraft and Airport Noise and Apportionment of Authority between Federal, State, and Local Governments, June 1, 1973, pp I-5-1 to I-5-5.

APPENDIX Q

Memorandum on Government Organizaton for Civil Aviation, by P. W. Cherington, for the Aviation Advisory Commission

APPENDIX Q

MEMORANDUM ON GOVERNMENT ORGANIZATION FOR CIVIL AVIATION, BY P. W. CHERINGTON, FOR THE AVIATION ADVISORY COMMISSION

MEMORANDUM

Government Organization for Civil Aviation

Introduction

The Aviation Advisory Commission has been concerned, *inter alia*, with the present and prospective organization within the federal establishment for handling civil aviation problems. It considered whether the present federal organizational structure was adequate for the plans and programs which it was proposing, whether the directions in which the organization was trending were desirable and whether there were organizational changes which might make possible a more effective civil aviation program. Finally, it examined the relationships that exist or may exist between the present and prospective federal civil aviation agencies on the one hand and state and local government agencies and industry and public groups on the other. This memorandum seeks to address itself to these questions and to set forth what appeared to be the major options which confronted the Commission in recommending a federal organizational pattern.

The Commission was, of course, aware that many interests in Washington are seeking an escalated position in the Government hierarchy for their particular interest, function or industry. Thus planners want to escalate the planning function in the organizational hierarchy; teachers want a separate department of education, etc., etc. It was also aware of the fact that most studies of federal organization (including the recent Ash Commission study, which forms the basis for many of the administration's pending organizational proposals) have concluded first, that there must be a reduction in the number of top, cabinet level departments and in the number of people reporting to the President and second, that the "special interest" agencies should be grouped with others having a similar area of interest so that competing or conflicting interests can be harmonized at the departmental, rather than the White House, level. Thus we have the Ash Commission recommendations for four civil super departments (Department of Human Resources, Department of Natural Resources, Department of Community Development and the Department of Economic Affairs which would absorb the functions of Agriculture, Interior, HUD, HEW, Commerce, Labor and Transportation. It is clear that any organizational pattern that the Commission recommends that calls for an independent civil aviation agency will be swimming against the current tide favoring greater amalgamation of civil functions and the tide against "special interest" agencies.

While the Commission is aware of these trends or fashions in federal organization patterns, it is not, of course, necessarily bound by them. A recommendation that runs counter to these trends may, to be sure, be expected to meet heavy opposition from organizational personnel in the Office of Management and Budget (OMB). But in the view of the Commission, the urgency of improving civil aviation programs may, nevertheless, dictate organizational patterns that run counter to fashion. Indeed it appears to be one of the tacit objectives of the organizational experts to weaken the program of special interest groups, leaving to an enlarged staff in the White House and the Executive Office of the President or at the secretarial level in the proposed super departments, the decision-making, selection and control of these programs. Thus, no matter how sound and strong a civil aviation program the Commission may recommend, it can be seriously weakened by an organizational pattern that permits it to be blocked or nibbled away by a growing staff of economists, budgeters, etc. surrounding the President and the super Cabinet officers. It may be noted that these staff members are usually without responsibility for seeing that anything gets accomplished and that they often are determined not to spend money which may help industry.

The Commission is convinced that regardless of current styles in Government organization, civil aviation merits an organizational position and pattern that will permit it to develop to the fullest extent and make a maximum contribution to the economic/social structure of the country. A corollary of this belief is that the present diffusion of responsibility for civil aviation and the lack of independence that it has had since 1967 have somehow and in some degree stultified civil aviation's role. The Commission believes that this situation should not be allowed to continue.

I. The Present Federal Structure for Civil Aviation

At the present time the handling of the several segments of the civil aviation program is somewhat dispersed throughout the federal establishment. The FAA in DOT is certainly the main focal point for civil aviation matters but on many administrative, economic and technical matters other agencies and offices are also involved and are sometimes preeminent.

The most important of these instances lie in the technical or R & D area and involve NASA which (like its predecessor, NACA) has important R & D functions in aeronautics. Having been transformed from a laboratory organization to a mission-oriented organization for the space program, NASA is not only competent but at times eager to move well into the development cycle in both aeronautics and electronics (Air Traffic Control). Its technical and managerial competence is certainly a valuable asset to have brought to bear on civil aviation. The only question is whether over time the DOT-NASA-FAA program can be adequately coordinated and whether NASA will keep abreast of real civil aviation needs and be sensitive to the economic and operational realities of the civil aviation industry.

A second instance of divided responsibility for civil aviation involves the CAB. CAB performs two types of functions which are of importance to civil aviation. It is, of course, the regulator of the for-hire aviation industry in the economic sphere. In this connection it ajudicates adversary proceedings as in the case of route certificates. In the second place it engages in extensive rule-making for the economic governance of industry. Finally in connection with either one or both of these functions, it performs a considerable number of essentially ministerial functions - negotiation of international agreements, gathering of statistics, planning, doing economic research and analysis. While ostensibly most of these ministerial functions are in support of its regulatory responsibilities, many are in fact only remotely related to regulation _per se_ and fall rather into the economic policy-making and economic fact-gathering area. The FAA has never had a commanding voice in this field, nor, as will be discussed below, does it have one today.

A third instance of the fractionalization of civil aviation responsibility involves the State Department which by tradition, fiercely defended, has the responsibility for negotiating all international agreements in civil aviation, as in other areas. These are both economic and technical in nature. Whereas State, in many instances of non-political matters, has permitted the concerned department to determine the U.S. position for negotiations, it has not done so in the case of aviation economics, although it has done so with respect to safety and technical matters. Whether this is related to the fact that the main substantive agency was a quasi-juducial, quasi-legislative commission is not clear. In any event until the creation of DOT in 1967, State insisted on having a major voice in the development of U.S. substantive positions on economic aviation issues. Nor has the situation changed materially since DOT arrived on the scene. It is granted a somewhat grudging place at the table in the development of U.S. policy positions. The present situation can only be described as a somewhat uneasy "troika" with State, DOT and CAB being more or less influential in the establishment of U.S. positions, depending on personalities, issues and the countries involved.

Still another area where civil aviation responsibility is dispersed is the field of labor relations. Here the Department of Labor has been largely successful in defending its position as the exclusive Government voice in labor management relations. DOT has made some gestures to challenge DOL's exclusive voice, but these attempts have not been outstandingly successful and have primarily involved modes other than aviation. Apart from its own labor relations with the Controllers, the FAA has played almost no role in aviation labor-management relations. In an industry with a very high labor content and one which has been plagued with numerous work stoppages and crises, DOL's exclusive handling of labor relations matters may be less than optimum. In any event DOL has succeeded in elevating labor-management to what is probably the industry's most important problem and has thus far offered no politically attainable solutions.

There are, of course, other more sharply focused areas where other agencies either dominate or have a major voice in substantive issues which have a major impact directly on civil aviation. Thus, the EPA has primary jurisdiction over smoke and noise pollution standards for aviation, as for other industries. DOD has a strong influence on civil aviation via the CRAF program, its airlift policies, its maintenance (or non-maintenance) of an industrial base and its policies and programs in the field of air traffic control. The Department of Justice seeks to apply strict Clayton Act standards to mergers in aviation, despite the specific provisions of the Federal Aviation Act concerning mergers and competition. Other agencies have a direct impact on aviation in various specific fields or in connection with ad hoc issues, e.g., Interior in connection with Trust Territory air service, or HUD in the area of urban land use planning and the siting of airports, the FCC in the allocation of radio frequencies, Treasury in handling customs clearance at airports, etc.

The Government is, of course, an establishment of impressive size covering an enormous spectrum of activities and issues. It is not surprising that there is a good deal of dispersion of responsibility in many functional areas that affect or are affected by civil aviation. Not all of the dispersion can be eliminated. Civil aviation is now too closely woven into the economic and social framework of the country. But there is every reason to believe that to the greatest extent possible civil aviation functions should be centralized in the federal government and that the agency having the major concern for aviation should have the position and the "clout" to implement whatever programs are determined for civil aviation.

Not even within DOT does the FAA have the sole role in the development and implementation of civil aviation programs. The Secretary, of course, is the superior of the Administrator and has the ultimate decision-making authority (short of the President) by statute and in fact. (The only exceptions to this statement are certain safety functions which are specifically reserved to the Administrator by the DOT Act.) The Administrator's plans and actions are subject to review and scrutiny by many members of the Secretary's staff, the Undersecretary, the Deputy Undersecretary, (Budgets and Programs) and virtually all of the Assistant Secretaries - Systems and Technology, Policy and International Affairs, Safety and Consumer Affairs, Environment and Urban Affairs and Administration. The National Transportation Safety Board, although not "under" the Secretary, can be highly critical of the Administrator and the FAA.

In the early days of DOT, members of the Secretary's staff and the FAA were in sharp disagreement as to the policies to be incorporated in a new airport/airway bill. This disagreement contributed to the non-passage of the bill in 1968. Since then there has, on the whole, been an improvement in the OST-FAA relation. Nevertheless, the Administrator has at times chafed under certain departmental policies which he felt were inimical to the best interests of civil aviation. In the personnel, environmental and R & D areas, there have been several sharp differences of opinion and, of course, the DOT Budget Office has usually reduced somewhat the FAA budget requests. Thus in the policy, program and budget areas, the Administrator is far from being able to move unilaterally in the vigorous support of civil aviation interests.

Still by Washington standards, the Administrator enjoys a considerable measure of prestige and autonomy. All Administrators of industry or modal-oriented agencies have had to bow to the new social concerns and all have been frustrated from time to time by budget cuts and barriers to their programs. It is difficult to strike that nice balance between a well-balanced program and no action at all.

Two additional features concerning the position of the FAA should be mentioned. At present the main channel for the Administrator to the President himself is through the Secretary, rarely direct. This is only natural since the Secretary is the Administrator's superior. In at least one previous administration the Administrator at times had frequent direct access to the President. This was true during part of the time when the FAA was an independent agency. But this direct access appears to have been more a function of close personal ties between the President and the Administrator than it was a function of the independence of the FAA. While direct access to the President may prove ego-building for the Administrator, it is not clear that it is a significant factor in the success or failure of the civil aviation program. In the present administration it appears that the Administrator has been able to communicate on a free and untrammeled basis with the White House and EOP (Executive Office of the President) staff, without any interference from OST. On the other hand, the Administrator has often found it helpful to accompany the Secretary on EOP visits or to be accompanied by one of the Assistant Secretaries. Thus it cannot be said that the location of the FAA in DOT has adversely affected FAA communications with EOP on aviation matters.

In the area of Congressional relations, the Office of the Secretary of Transportation (OST) has imposed some restraints on trying to pre-sell programs that were in excess or at variance with the program of the President. Early in the present administration it was decided to centralize the congressional liaison function in OST. This decision caused considerable concern to the Administrator and in fact the decision has never been fully implemented. The present Administrator has a large circle of friends on the Hill and the evidence is that he has visited with them extensively and to good effect. More routine Congressional matters and contracts are somewhat less unfettered than when the FAA was independent. On the other hand, the OST staff provided considerable support and cooperation to the FAA in the passage of the Airport/Airway bill. It cannot be said that the present location of the FAA in DOT has led to a critical congressional relations problem.

Conclusion. While the present degree of dispersion of civil aviation responsibility within the federal government is not great, civil aviation programs would undoubtedly be benefited from a greater concentration of clear-cut responsibility and authority. Similarly, so far as the FAA goes (the single most important focal point for civil aviation in the Executive Department) any steps to downgrade this agency should be resisted. Some up-grading of its position would undoubtedly aid in the more effective and rapid implementation of civil aviation programs.

II. History as a Guide to the Future

In considering various federal organizational patterns for civil aviation, the AAC has reviewed the evolution of these patterns especially during the last 35 years.

Prior to the Act of 1938, the Department of Commerce (Bureau of Air Commerce) and the Post Office Department (POD) were the only federal departments which had any appreciable interest in civil aviation. (The ICC was briefly given some regulatory authority over rates but never really implemented a program). The POD provided subsidy to the carriers through the award of air mail contracts. The Bureau of Air Commerce performed the functions of licensing airmen, registration of aircraft and erection of such air navigation aids as there were at that time.

Following the Black investigation into the award of air contracts, their cancellation, the unfortunate Army operation of air mail flights and a series of bad air carrier accidents. Congress passed the Civil Aeronautics Act of 1938. With some modifications and some reshuffling of responsibilities and organization, the Act of 1938 is still the basic legislative foundation for civil aviation programs.

The Act of 1938 merged most of the functions affecting civil aviation into a single Authority in the Department of Commerce. The Authority itself was divided in turn into the five-member Authority, an Administrator and a separate and autonomous accident investigation unit, the Air Safety Board. Thus most of the major functions of government concerning civil aviation were brought together in a single, albeit three-headed, agency. The Department of State was only beginning to be active in the international area, where prior to World War II, Pan American had conducted most of the international dealings. NACA was outside of the structure but confined itself almost exclusively to advanced and fundamental research in the field of aeronautical science, much of it primarily of concern to the military. But unification did not last long. President Roosevelt by Reorganization Plans III and IV abolished the Authority in 1940. Simultaneously he abolished the Air Safety Board, putting this function into the newly created Civil Aeronautics Board which became a largely independent regulatory agency. To be sure the Department of Commerce (DOC) continued to "house-keep" for CAB, and CAB's budget was incorporated in the DOC budget. It nevertheless, developed a high degree of autonomy in substantive matters. Only the Civil Aeronautics Administration (CAA) was left in Commerce.

This was essentially the organizational pattern in effect for civil aviation for the 20-year period to 1958. The only events of major organizational significance during this period were the rise of the influence of State as international aviation rose to prominence after World War II and the creation of the Air Coordinating Committee, created in 1944 and abolished in 1958.

The ACC was created late in the war to help coordinate military-civil matters which, as the war approached its end, became of more and more significance, and to handle the post-Chicago Convention decisions and events. A great deal of the work of ACC was involved in determining the U.S. position on a host of technical issues which had to be resolved in the establishment of a network of international civil air routes and operations in the post-war period.

The ACC also had legal and economic units which attempted to harmonize the views of the federal agencies on such matters as a multilateral vs. a bilateral exchange of traffic rights, the carrier liability issue, etc. In its early days the ACC performed a valuable function. As time went on, and more and more matters were "processed" by the ACC staff, its membership began to sink to lower and lower rank levels, the paper work began to bury the substance, and it became a convenient resting place for "non-decision-making."

There were, during this period, particularly during the 1950s, increasing conflicts between military and civil aviation objectives, and the civil authorities were frequently thwarted by the military's ability to proceed in their own way or with their own system regardless of the civil requirements and wishes. Thus there was the GCA/ILS controversy, the Tacan struggle, and almost constant friction concerning military-civil use of airspace and airports.

Conflicts waxed and waned, in part depending upon the personality of the key personnel involved. Because of the Korean War and the cold war that followed it, military interests were often able to override the civil interests.

But of much more concern in the period from 1945 to 1958 was the growing inability of the CAA to maintain and expand an effective air traffic control system. While the DME/Onni system of navigation was introduced, together with a growing use of radar surveillance, the method of controlling aircraft remained pretty much as it had been (flight strips) and the advent of the much faster jets threatened a serious breakdown in the system. A preliminary study of the problem was undertaken by the Harding Committee in 1955 and this led to the in-depth Curtis Committee study in 1956-57. The report of this Committee led ultimately to the Federal Aviation Act of 1958.

Part of the difficulties of the CAA related to funding. The agency had trouble in running the successive budget guantlets of Commerce, Bureau of the Budget and the Congress. The result was a somewhat sporadic pattern of appropriations which in aggregate were inadequate either to bring into being an updated and upgraded traffic control system or to hire and train a sufficient number of personnel to operate the existing system. The only times when the level of appropriations came close to meeting needs were those years immediately following serious accidents, especially those involving congressional personnel. Inadequate funding cannot be traced directly to the fact that the CAA was buried in the Commerce Department, but this fact and especially inadequate leadership at either or both the Administrator and Assistant Secretary level certainly explain a major part of the problem. (It may be noted that in the same period, 1955-56, the Bureau of Public Roads which was also located in Commerce pushed through the Interstate Highway legislation. The Bureau was greatly aided in this effort by the fact that it was able to interest President Eisenhower personally in the program. The President did not become particularly involved in aviation until late 1956 or early 1957, at which time he appointed General Ted Curtis and then General E. R. Quesada as his special assistant for civil aviation. It was General Quesada who, acting on the Curtis study report, spearheaded the drive for the Federal Aviation Act of 1958.)

The Federal Aviation Administration, set up by the 1958 Act, was removed from Commerce and set up as an independent agency. The first administrator was General Quesada who for a time also maintained his title as Special Assistant to the President for aviation. The new FAA took over from the CAB the rule-making function of issuing Federal Air Regulations (previously Civil Air Regulations). It had become increasingly clear that the CAB lacked the necessary expertise to perform this job adequately. Not only were the members not qualified to pass on the increasingly complex technical issues involved in the FARs, its staff was insufficient in number for the task. CAB at this time retained the Accident Investigation function, which it was to lose in the DOT Act of 1966 to NTSB. The Act of 1958 made only very minor changes in the economic regulation and promotion of civil aviation.

The 1958 Act did, however, contain two provisions of importance to the present review of organization. In the first place it provided for an Airways Modernization Board which was attached to the FAA but which had a measure of independence of the organization except via the Administrator himself. The aim was to get work done on a new ATC system without having it crushed by the weight and inertia of the existing system (and its personnel). A second reason was to attract persons to work on the ATC problem who could not possibly have been persuaded to join the FAA. However valid these reasons may have been at the time, the AMB did not work effectively. Its interface with the FAA R & D and Operating units was poor. It was abolished in 1962 by then Administrator Halaby.

A second change of significance that was made by the 1958 Act was that the FAA was granted authority to develop new aircraft. This authority was promptly utilized to begin work on the SST project.

Independence did not bring an end of the troubles of the CAA/FAA. Erratic, and on the whole inadequate, appropriations continued to plague the agency throughout its decade of independence.

When Congress passed the Department of Transportation Act in 1966 (to take effect on April 1, 1967), there was only a modest amount of dissent from the proposal to put the FAA into the new department. The euphoria of both industry and the Congress which had greeted the FAA in 1958 had, by 1966, largely evaporated. As an independent agency, FAA had failed to attract markedly increased appropriations support; it had not made notable progress on the ATC system, and it seemed to have no very innovative ideas as to what kinds of programs it should propose in the airport area nor on how to finance the escalating costs of aviation programs. General lack of enthusiasm for the agency, plus the popularity of the idea of unifying all transportation in a single agency, easily overcame any objections which were raised against loss of independence for civil aviation.

The DOT Act of 1966 removed the aircraft accident investigation function from the CAB and placed it in the new, largely independent National Transportation Safety Board. Thus was the Air Safety Board of the 1938 Act rehabilitated, this time with investigative and recommendary responsibility for accidents and hazards in all forms of transportation.

III. Future Problems of Civil Aviation to Which Federal Organization Must Be Responsive

The primary test of any organizational pattern is whether it contributes importantly to the handling and solution of problems and issues associated with the organization's mission. A good organizational pattern can contribute materially to the achievement of the mission; a weak pattern can be a serious drag and obstacle either in the way of attracting resources (including management and manpower) or applying them to the mission in a reasonably economical and efficient manner. This does not mean that a strong organization guarantees mission performance; a sound program can fail even in a strong organizational structure. But, given the difficulty of obtaining effective action within the federal establishment, under even the most favorable conditions, it would certainly be an error for the Commission to recommend anything short of the strongest, realistic organizational pattern.

Before examining various alternative organizational patterns, it is important to have in mind the major civil aviation problems and ieeues that are likely to confront the industry and the Government over the next two decades, especially those which will differ or change substantially in priority or nature from the past. Essentially the prospective problems of civil aviation, and their optimal solution, are the subject of the Commission's entire report. They need only to be mentioned here briefly, without any attempt to provide a complete catalogue.

The problems and issues which will confront civil aviation can be generally arranged under the seven following categories.

Safety - in all its aspects, including the certification of airmen, certification of aircraft, and regulation of operating practices and procedures.

Civil Aviation Facilities - the development and furnishing of airports, air navigation and air traffic control facilities. While these do not necessarily have to furnished or operated by the federal Government (as indeed is true of airports today) it seems probabl that the federal Government will have to take the initiative in seeing that the facilities are adequate to the needs of civil aviation, that they are environmentally acceptable and that they interface properly with the surface transportation system.

Survivability of a U.S. Aircraft, Engine and Avionics Industry - Whereas civil aviation in the past has largely piggy-backed on the military so far as the research, development and manufacturing industries are concerned, it appears that this will no longer be possible to anything like the same degree. Nor is it at all clear that market economics will assure the survivability of R & D and manufacturing companies for civil aviation products. Some involvement by federal civil authorities with these industries seems called for. This will be a new, or at least a greatly expanded, function for the federal civil aviation organization. Relations with military organizations will be especially difficult to resolve.

Functions of General Aviation - It seems probable that it will be increasingly difficult to handle the many types of general aviation activity within a framework essentially designed and operated for high performance air carrier and military aircraft. If all of general aviation is made to conform to the equipment and operating specifications of the air carriers and the military, it may constitute a manace to itself and others. This is an old problem which is likely to become much more acute in the future.

Economics of For-Hire Air Transportation - The economics of the air carrier industry, including especially relations between various segments of the industry and of air carriers to suppliers and manufacturers, pose increasingly acute problems. Involved are questions of competition, pricing, subsidy and service. A continuation of recent trends may result in the inability of the industry to finance its anticipated future growth.

International Relations - As the civil aviation capability of foreign countries has increased our past policies and practices may no longer be adequate to protect either the interests of U.S. shippers and travellers or the interests of our air carriers. This is especially true where the pretense is that we are operating under rules of open competition whereas in fact the foreign country is pursuing a policy of virulent restrictionism. Ability to settle problems quickly and vigorously appears to be an urgent requirement.

State-Local Relations - Only a few states have had well-staffed, aggressive aviation organizations, although several are acquiring more or less adequate Departments of Transportation. The only major influence on civil aviation has been a small number of powerful, largely autonomous port authorities. If, under revenue-sharing, the states and cities are going to be able to select the transportation projects on which to spend money, aviation's voice at the state and local level must be greatly strengthened and relations between the federal organization and state and local organizations must be greatly improved.

The foregoing would appear to embrace the most pressing problems which civil aviation is likely to face over the next two decades. Some might prefer a different grouping; others might like to single out and highlight a specific problem area that they thought especially important, such as noise or airport capacity. Whether this or another list is used, there is no question that the prospective problems of civil aviation are acute, that they cover a very wide spectrum of activity and that many of the issues involved are highly controversial and difficult to answer.

IV. The Organizational Options

There are, of course, dozens of ways in which civil aviation might be organized within the federal establishment. In general, however, each of the many possible organizational patterns can be classified as falling essentially into one of the following categories.

1. The Status Quo. FAA continues in DOT as an administration. No basic change is made in the internal relations of FAA to the OST staff or other parts of the department and no basic change is made in the relations between DOT and other agencies and organizations.

2. The Administration's Proposal. The Administration has proposed a sweeping reorganization of the cabinet departments. The proposal is based on studies completed by the Ash

Commission, although as translated into proposed legislation the timing and exact plan of the Administration's proposal do not follow the Ash recommendations precisely. Under this proposal, State, Defense, Treasury and Justice would remain essentially unchanged. The other seven cabinet departments would be shifted and compressed into four new super departments:

Human Resources
Natural Resources
Community Development
Economic Affairs

Seven present departments would cease to exist (Agriculture, Interior, Labor, Commerce, HEW, HUD and DOT). In the case of DOT, its present functions would be split, with the Urban Mass Transit Administration and all, or at least major pieces, of the Federal Highway Administration going to Community Development and with the rest of DOT going to Economic Affairs. Thus FAA would be moved to Economic Affairs where transportation as a whole might be represented by an Undersecretary. As presently drafted it is not likely that the Administration's proposal would bring about any concentration of civil aviation authority and would almost certainly tend to de-escalate the position of civil aviation in the federal establishment. While this may not necessarily be bad in terms of the overall organization and priorities of the Government, it almost certainly reduces the chances of successfully handling the civil aviation problems and issues discussed above in Part III.

3. A move somewhat different from the Administration's proposal would involve the organizational escalation of civil aviation within either DOT or, if formed, the Department of Economic Affairs (DEA). Such escalation would involve the designation of an Undersecretary, of Civil Aviation, the transfer of functions from other agencies, e.g., R & D from NASA, a stronger voice in international negotiations, perhaps some of the ministerial functions of the CAB, etc. This option would thus be the vehicle for upgrading the position of civil aviation; it would also place the chief spokesman for civil aviation on the staff of the Secretary as well as in a line relationship to him. Finally, it would provide a plausible location for the central placement and concentration of civil aviation functions now scattered in other departments or of new ones yet to be developed.

4. Department of Civil Aviation. It has been suggested that if civil aviation is to have the position it deserves and needs to achieve its goals, it should be elevated to cabinet rank with a Secretary of its own reporting directly to the

President. Regardless of the merits of such an organization from the standpoint of civil aviation, the proposal runs exactly counter to general trends in federal organization. In consequence it would seem to have almost no chance of being adopted. A comparable or lesser amount of effort devoted to "selling" one of the other options would be far more likely to result in improvements for civil aviation interests.

What has just been said about a wholly separate and independent Department of Civil Aviation does not necessarily apply to a "service-type" department with a "service secretary" within either DOT or a new Department of Economic Affairs (DEA). Presumably a "service-type" department would be patterned along the lines of the Departments of Army, Navy and Air Force in DOD. Such an organizational pattern would be very close to that discussed in item 3 above concerning the creation of an Undersecretary for Civil Aviation who would have both line and staff responsibilities. A Secretary for Civil Aviation would be especially feasible if the title of the heads of the new super agencies is changed, as has been proposed.

The foregoing appear to represent the basic patterns of organization. Within each there is a wide variety of organizational suboptions, involving not only particular patterns of organization but various degrees of concentration of responsibility and authority over the entire spectrum of civil aviation.

V. Analysis of Organizational Patterns

The U.S. federal government is the largest organization in the free world and as a machine supposed to make decisions and implement them, it is certainly one of the most difficult to operate. Getting things done in government has been likened to kicking a feather bed or a large, damp sponge. In part this is supposed to be. For on any issue there is designed into the system an opportunity for various interests and voices to be heard and their respective positions weighed. The resolution of conflict is by nature a complex and time-consuming task, one which inevitably involves a measure of politics along with the merits of the issue.

In judging alternative patterns for organizing government functions, there appear to be several features which tend to make for effective programs and organizations as against programs that drift and organizations which, while making a great show of activity, in reality are doing nothing. In the last analysis, a mission-oriented government organization with program responsibility is nothing more than a mechanism for acquiring a share of resources - money generally, but sometimes manpower - and throwing them at a problem or series of problems in as artistic a fashion as possible. Thus the organization must have the position and strength to develop a program or series of programs, get them funded and then spend the money in a tolerably effective way. To do this usually requires some kind of public constituency which is kept reasonably happy and whose views are reflected on the Hill. The agency must have sufficient breadth of authority so that it can devise and control programs which will resolve or ameliorate a fair number of the problems of its constituents. It must be far enough up in the hierarchy so that its programs are not strangled in the program review and budget process or traded away completely for other programs which are currently more popular in the department or OMB. It must have channels for dispensing its resources that are reasonably effective (not too bureaucratic but not so loose as to invite pilferage) and that are directed toward real needs. Finally the organization must not be so deviant from current fashions concerning government organization that it arouses the attention of government organization professionals.

If these are valid criteria, what can be said about the alternative organizational patterns described in IV above?

The status quo - leaving FAA in DOT with its current authority and relations - would not perhaps be disastrous, but it would at the same time be far from optimal. Neither the FAA nor the DOT at present has the breadth of authority it needs to run an effective civil aviation program. In part that authority resides in other agencies. In part it does not exist at all, as in the case of R & D for new transports and assistance in making the airplane, engine and avionics industries viable. Even within DOT, there is a division of authority and initiative as between the FAA administrator and the OST staff. This has shown itself in the areas of R & D, environmental acceptability and the economics of intermodal transportation. In large measure the OST staff has moved in because of a vacuum within the FAA. But regardless of the reason, initiative and authority has been fractured. In a word it should be possible to devise organizational patterns that will do better than the status quo.

At the other end of the spectrum, an independent cabinet-level department of civil aviation, no matter how all-embracing and centralized its authority, must be regarded as so deviant from the current thinking of the Administration and of the professional government organizers in OMB as to be unacceptable. The trend is away from independent agencies; and the current conventional wisdom is especially opposed to independent agencies which have a strong one-dimensional constituency to lobby for it - farmers, highway interests, etc. As already noted, efforts made to sell this pattern are almost certain to be frustrated and the effort, which might have been used to achieve good effects in other areas, wasted.

Either the Administration's proposal to create a Department of Economic Affairs, to which the FAA would be transferred, or the continuation of DOT, with an improved status for civil aviation, would seem to offer acceptable and manageable alternatives. The former alternative has the advantage that the legislation proposing the department is part of the President's program. If the Administration is reelected, it can be expected to push this legislation, although passage is not anticipated in the near future. On the other hand the legislative proposal is not so firmly cast in concrete that changes along the lines suggested below could not be made.

A major disadvantage of the Administration's proposal is that the Secretary of DEA would have a very broad sweep of authority and responsibility to the point where he could be expected to give only limited time and attention to civil aviation. Thus there is an urgent need in the new department for a strong voice for civil aviation and an important and visible place for the head of aviation in the departmental hierarchy. Being a new department, this might be easier to achieve than in DOT.

There are certain other drawbacks to the Administration's proposal. Any new organization - and this is especially true of a new Government organization with numerous personnel and sweeping authority - takes some time to cook. Thus it is probable that it would be at least two years after it was created, and maybe four or five, before the new department would begin to function effectively. For civil aviation this time might be shortened and if an Undersecretary for Civil Aviation (or other top official) were given considerable autonomy.

Another drawback to the establishment of DEA and its companion department, the Department of Community Development, is that there will be a renewed split in the Government's concern for transportation as a unified function. This fractionalization was the key factor that led to the establishment of DOT in 1967. And while the Department has not, perhaps, lived up to the fondest hopes of its proposers, its record has, nevertheless, been quite tolerable. There is certainly no evidence that points to the desirability of splintering the transportation functions again. But while it appears undesirable, from an overall transportation system standpoint, to breakup DOT, it cannot be argued that such a split will necessarily be damaging to civil aviation interests. Indeed, some would take the contrary view.

The upgrading of civil aviation within DOT is likely to pose a number of difficulties and problems. The Department is at present structured along a strict line and staff pattern. The Assistant Secretaries in the office of Secretary are staff officers to the Secretary and to his alter ego, the Undersecretary. With some exceptions they do not have, or at least are not supposed to have, line authority and responsibility. That authority is supposed to reside, and in general does reside, in the Administrator. The exceptions which have arisen are, nevertheless, instructive. The Assistant Secretary for System Development and Technology has acquired a substantial program of advanced research in aeronautics and air traffic control, leaving to FAA R&D on nearer-term systems and hardware. The SST office in its final years was removed from FAA and put in OST presumably to avoid any conflict with the development of the prototypes and ultimate certification of the aircraft. Both the Assistant Secretary for Safety and Consumer Affairs and the FAA have played major roles in attempts to deal with highjacking. The Assistant Secretary for Environment and Urban Systems has played a vigorous role in engine noise and smoke standards and in the environmental aspects of airport siting. Finally the Assistant Secretary for Policy and International Affairs is the principal departmental spokesman - rather than FAA - on airline economic questions.

The maintenance of a strict line and staff organization within DOT may well have weakened the decisiveness with which the civil aviation program has been developed and implemented. For a while in the early days of the department, there was an open struggle between the line and staff as to the type of program that was to be developed and who was to carry it out. That struggle was largely resolved with the Airport/Airway Act. But the Administrator's own staff has not been sufficiently strong to argue with complete effectiveness for civil aviation programs either with the OST staff or in the Executive Office of the President.

What is being suggested is that the Administrator should become at one a line officer and a staff officer to the Secretary - a line officer in the sense that he is responsible for the operation of the FAA and the implementation of the program and a staff officer in the sense that he is the Secretary's main program developer and adviser on all civil aviation matters (economic and technical) at least on a par with the Secretary's functional advisers. In addition he would not only have clear responsibility for the aircraft operating industries but for the civil aviation R&D and manufacturing industries as well.

The gathering of these and similar DOT functions into a single line and staff organization dealing with civil aviation should greatly strengthen the likelihood of achieving civil aviations goals. In addition, there should be added to the responsibilities of this urgraded civil aviation organization the following functions now performed by other agencies, or not performed at all.

1. Research and development activities of NASA - in aeronautics, avionics and propulsion as they pertain to civil aviation.

2. Establishment of an office, bureau or other organizational unit to deal with problems of new aircraft, engines and avionic systems needed for civil aviation. This office would also administer programs designed to assure the continued viability of the development and manufacturing industries of these items.

3. Development of substantive positions and policies in the international area - now exercised by State, DOT and CAB on a divided basis. State would continue to conduct negotiations with foreign governments.

4. Development of policies and procedures and an active role in civil aviation labor-management relations. This function is now performed almost exclusively by DOL.

5. Ministerial functions of CAB - This is probably the most controversial of the functions proposed to be transferred to the Undersecretary for Civil Aviation. Indeed some members of the Commission are known to be opposed to the transfer of any CAB functions. The intent of the suggested transfers is not to make the CAB's adjudicatory and legislative decisions subservient to the Undersecretary of Civil Aviation, but to remove those administrative and policy functions that should be in the executive branch. At the same time, it is hard to think of an effective "Mr. Civil Aviation" if the economic concerns and policies of our domestic and international airline system are handled by an entirely separate and independent agency.

Basically the Board performs three functions. In the first place, it hears and decides cases involving adversary parties. What routes should be certificated, which carrier should get which route, deciding whether a merger should be approved, etc. This is essentially an adjudicatory role, picking one or more applicants or petitioners from a group, on the basis of an evidentiary hearing.

A second function is essentially legislative - the setting of rates and fares. There is often a hearing, to be sure, but it is not typically an adversary proceeding in the usual sense of the word, although Bureau Counsel or other parties may attempt to turn it into an adversary proceeding. Rate-making from time to time has been undertaken by legislatures although they now typically delegate this function to a regulatory tribunal.

Finally the Board performs a large number of administrative or ministerial functions. Some of these are loosely related to the Board's adjudicatory or legislative roles. Others are largely divorced from these two functions. For example the Board does a considerable amount of work on gathering and analyzing the accounting and statistical reports of the carriers. This is neither a judicial nor a legislative function. To be sure the accounting data are needed for regulatory purposes, but they are widely used for other purposes as well. Courts do not have accounting sections; neither do legislatures, unless the G.A.O. be counted as such. The Board, indeed, develops the chart of accounts for the airlines and the methodology by which traffic surveys are conducted and reported. Perhaps because of focus on regulation, the accounting system is essentially one of financial accounting and is ill-adapted to managerial control purposes. (For example, it is impossible to get route segment load factor data from the reported data.)

Another example of the essentially administrative or ministerial roles performed by the Board at present can be found in the Board's work in its International Division in the way of working out positions for bilateral negotiations, and in the research area where a variety of studies have been performed, sometimes to confirm the soundness of one or another Board decision.

The Board has also carried out the function of determining and awarding subsidy. While the carriers would declare that the Board has been exceedingly parsimonious in its awards, the fact remains that in the case of the local service airlines, subsidy has declined and more recently increased, without much regard for what it is that the Government is getting for its money. It is certainly not getting air service to smaller communities, if that is the program objective, since the number of such cities receiving service by the local service lines has decreased rapidly as the local service lines have turned these points over to the unsubsidized third-level carriers. What it does seem to have obtained is a network of regional carriers which are increasingly focusing on high density short to medium haul markets in competition with the trunklines. There is perhaps nothing wrong with this, but it is a rather strange way to develop a rational route structure and almost certainly a complete move away from the original purpose of local service subsidy. This change has been brought about without any review of the program relative to other aviation or to other transportation programs.

In common with virtually all of the regulatory agencies, the Board has no stated policies as such. Its policies at any one moment of time can be deduced from a reading of the dicta in current decisions, but this is often an unreliable guide to what future policies will be. There thus tends to be a policy (and planning) void since DOT is reluctant to assert a policy role except in areas (such as international) where it has a mandate, either by statute or at the direction of the President.

It is true that the transfer of the Boards administrative and ministerial functions to the proposed Undersecretary of Civil Aviation is no guarantee that they would be performed in a superior way, but it seems inconceivable to set up a "Mr. Civil Aviation" with a good deal of position and centralized power and then in the same breath say to him - "By the way, don't worry about the economics of the airline industry; the Board will do that." What is proposed here is to turn the Board into a straight adjudicatory and legislative body which would hear and decide adversary proceedings and would legislate in the rate and fare area. The Board would retain whatever staff was needed to assist it in carrying out this role. The Board's ministerial functions - policy and program development for air transport, data collection, research and analysis, etc. would be placed under the jurisdiction of "Mr. Civil Aviation."

With the addition of the foregoing responsibilities and functions to the present FAA functions, there would be a strong and centralized agency capable of dealing with all facets of civil aviation at the federal level. It would have a span of authority easily justifying sub-cabinet (Undersecretary or "Service Secretary") rank and status either in DOT or in a new Department of Economic Affairs.

The way in which the DOT might be structured under such an agreement can be seen from the accompanying chart. Note that the new functions are added primarily in a new administration (FADA) or at the staff level to the Undersecretary. The chart also shows the possible placement of a government corporation to handle the air traffic control function if it were decided to proceed in this direction. From the standpoint of both industry and of state and local officials, there would be no ambiguity as to where the responsibility and authority for civil aviation lay.

Inter-departmental Coordination:

As already noted there has been from time to time in the past a need for interdepartmental coordination on civil aviation matters. This need was met from 1944 to 1958 by the Air Coordinating Committee. Since then it has been met by more ad hoc arrangements. To a degree, the need for a large standing committee to provide inter-departmental coordination of policies and programs is a clear signal that there is insufficient centralized authority in the regular departmental structure; - there are too many drivers handling the same reins. The creation of an Undersecretary for Civil Aviation with the functions and responsibilities outlined above should go far to cut down on the amount of required interdepartmental coordination. The Undersecretary would have most of the reins in his hand and would presumably have the "clout" to drive the team.

Still, in an organization of the size and complexity of the federal government there is bound to be some division of interest and responsibility, particularly in a field like aviation where there is a major military, as well as a major civil, involvement. The Commission has considered, therefore, how inter-departmental coordination could be achieved in an effective manner, without the creation of an unwieldy bureaucracy or without undercutting the position, and authority of the proposed Undersecretary. It did not accept one staff suggestion that there be created in the Executive Office of the President a new policy-making, coordinating and planning group since it appeared that such a group would very likely usurp, or at least attempt to usurp, the functions of the Undersecretary for Civil Aviation. It viewed more favorably the use of the National Space Council, as modified to include aviation, to perform the necessary coordination. Alternatively some members of the commission believed that a National Aviation Council set up in a parallel to the Space Council might give aviation somewhat greater visibility.

In point of fact the Space Council, which is chaired by the Vice President and has a small staff of its own, appears to have been only moderately active in recent years. It has become largely an information exchange on the space program and a public relations vehicle (for space shots and the like), rather than a focal point for major policy coordination and decision-making, en route to the President.

In this connection it is important to distinguish a number of functions that are involved in interdepartmental coordination and upstream communication.

There are first those questions calling for interdepartmental resolution. Illustrative of this type of question is the civil/military use of the airspace. Specific questions of this type can generally be resolved on an interdepartmental basis once some general policy guidelines have been established, often at the White House level, if not indeed by the President personally. Almost all of these questions involve some compromise or yielding of parochial interests. For example, it is simply not possible for the military, on the one hand, to have all the air space reservations it would like, and it is also not possible for civil aircraft to fly at will through danger zones and reserved air space. Both sides must yield somewhat. How much is a matter, in the last analysis, for the President to decide, if a reasonable compromise cannot be reached by his "ministers."

To the extent that policy conflicts are of a bilateral nature, they do not require a large coordinating committee where in effect other ministers or their representatives sit as umpires on matters which in fact are none of their business. Nevertheless, it is important that there be some mechanism for monitoring to assure that these matters do, in fact, get resolved either through interdepartmental negotiation or by the White House as a matter of last resort. This kind of "monitoring" function is probably better performed by a Presidential staff member, presumably one with a "passion for anonymity" and a low profile. His essential qualification should be that he does not fancy himself as "Mr. Aviation" in lieu of the Undersecretary.

If such a Presidential staff member existed on a regular basis, then the case for an interdepartmental aviation coordinating group would be greatly weakened since multilateral policy issues requiring coordination could be "crammed down" on the departments for resolution, or alternatively decided by the President. And in point of fact each of the last six Presidents has, from time to time, had such a staff person or persons. The title, rank and assignment of the "person" has varied not only from administration to administration but also during an administration, as the personalities changed. And given the fact that White House staff organization is highly dependent (and should be) on the operating style of the President, it is probable that this somewhat nebulous situation will continue. The main case for an ongoing Aviation Council (or combined Aviation and Space Council) is that it would provide an institutional continuity in an otherwise highly fluid situation.

There is, however, a second reason for believing that an Aviation Council could perform a useful role. The establishment of a "Mr. Aviation" in the person of the Undersecretary for Civil Aviation is going to provide regional, state and local interests with a single point of contact in Washington on civil aviation matters. In most respects, this will be a real advantage. But it will also create the hazard that the federal civil aviation monolith will steam-roller nonfederal interests and concerns, regardless of how many advisory committees or panels the Undersecretary may establish. An Aviation Council with some nonfederal membership would provide some assurance that legitimate regional, state and local interests were not ignored or unduly submerged in the federal program. This might have political as well as substantive advantages for the administration in office.

In order to tie together the multilateral interdepartmental coordination function with the monitoring function (to assure that interdepartmental issues are in fact resolved) it is suggested that the Executive Director of the Council be the White House staff member designated to handle civil aviation matters. He could, of course, have such support assistance as was required. But his dual role should expedite the resolution of issues which were resolvable or speed those which could not be resolved (and were of sufficient importance) on their way to the Chief Executive.

Regional, State and Local Interests:

Thus far the primary focus of this memorandum has been on the federal level. In fact regional, state and local groups have major responsibility for implementing much of the federal program and for initiating programs of their own. There are more or less continuous complaints that the federal establishment tends to ignore these groups both in the development of policies and programs and in their implementation at the federal level. Mention has already been made of the fact that the centralization of civil aviation functions in the hands of an

Undersecretary should provide a partial resolution of these problems. Presumably the Undersecretary would establish a variety of channels of communication with regional, state and local interests in addition to his geographic organization.

There are, however, a number of further steps which might well be explored and examined in connection with the gradual evolution of more transportation and aviation capability at the regional and state level in the form of regional transportation authorities and state departments of transportation. The exact nature of the federal-nonfederal relation and the degree of delegation of authority deserves to be explored in much greater depth than can be done either in this memorandum or by the Commission. As part of such a study consideration should be given to the question of the impact of revenue-sharing, if implemented, on the aviation relationship. But the more centralized civil aviation organization called for in this memorandum would appear to facilitate improved federal/nonfederal relations.

Source: Cherington, Paul W., "Memorandum on Government Organization for Civil Aviation," Aug. 9, 1972, in Aviation Advisory Commission staff and consultants, The Long Range Needs of Aviation, Technical Annex to the Report of the Aviation Advisory Commission, January 1973, Vol. I, pp I-507 to 531.